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PLAY METER

Volume 1 No. 10

October, 1975

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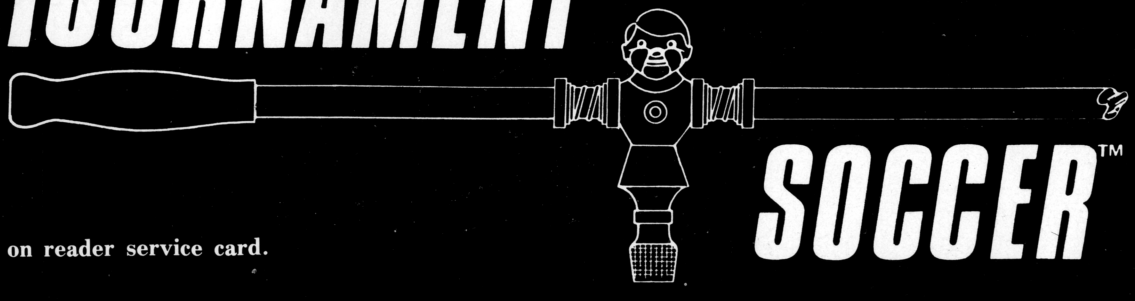

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COIN INDUSTRY PLAY METER

MUSIC OPERATORS MOA OF AMERICA
MEMBER

October, 1975

Volume 1 / No. 10

features

In the Valley of the Moon 31

In an industry hurtling through the Space Age, there is little room for dinosaurs. You probably won't find any in the valley where Atari Inc. makes its home, it being a center of electronic and computer technology. Associate Editor Sonny Albarado filed this report on what makes Atari Atari after a recent visit to the company.

The Fantasy Builders 33

At Atari's plants, games do not appear magically, but go through a rigorous process that is described in this article.

Reading the Cards 40

Editor and Publisher Ralph C. Lally II peered into his crystal ball and cast these predictions for the future of the industry and its operators. The article was culled from a speech Lally gave to the Florida Amusement and Merchandising Association.

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FROM THE EDITOR

What a year it has been.

When they told us we couldn't do it, it made us all the more determined to make it work. They smiled when they saw us at MOA last year, but shook their heads and told us not to expect to return this year. But here we are.

Although we were unsure at our inception that the industry's manufacturers and suppliers--our advertisers--were really ready for *Play Meter*, we were confident the operators of America--our largest group of readers--were beyond ready. Following our first complimentary mailing of 8,000 last November, paid subscriptions poured in from every state of the Union, including Hawaii and Alaska, justifying our confidence.

The response from most of the new subscribers was, "At long last, we have something that's good and which we can call our own." those all-important readers--American amusements operators--carried us through the earliest and roughest issues of *Play Meter*. But it wasn't long afterwards that the advertisers began to awaken to the fact that operators were *reading* this magazine.

And since then, in the past 10 issues, we have advertised the names of almost every nationally known manufacturer and important supplier in this business, not only domestically, but internationally as well. In this issue, for example, we welcome new overseas advertisers NSM from Germany, Bonanza and Taito from Japan, and Associated Leisure of London.

Not only have international advertisers taken an interest in *Play Meter*, but our international subscribers have grown at the same rate as our domestic readers. European, Asian and Indonesian operators have gotten wind of us and as we culminate our first year, we enjoy an international reputation, as well as popularity at home. And we owe it all to the early support of our readers and the continuing confidence of our advertisers.

So here we are, almost one year later, back where it all started for us--the MOA Exposition. The 1974 show was large, but we think 1975's is the biggest and best show ever. If you come to Chicago, we hope you'll drop by our booth on the exposition floor [No. 193] or by our booth in the press section to say hello and so that we can say, "Thanks."

If you're unable to join us, we hope you enjoy the sneak preview contained in this issue and we hope to see you within the next year. If you felt compelled to atend the NAMA show in our hometown, New Orleans, and now realize that while it was worth it, you should have gone to Chicago, we hope you will enjoy the full convention coverage we'll have in our next issue. Maybe next year, we'll be able to cover both NAMA and MOA for you and we'll see you at both places.

And as you may have noticed in last month's issue, we will have a double surprise for all of you immediately following our December issue. In January we will be publishing our industry-wide directory of manufacturers, distributors and suppliers and we will also publish the first of our mid-month music supplements, which will give increased coverage of record chart action, record news and fast-breaking coin machine news.

It is a new service designed as an additional "thank you" for our paid subscribers to whom we owe so much. And it's all part of our effort to make *Play Meter* "The Only Magazine You'll Ever Need."

Ralph C. Lally II
Editor and Publisher

Calendar

Oct. 2-4:
Music Operators of Virginia, annual convention. Howard Johnson Motor Lodge, Richmond, Virginia.

Oct. 16-19:
National Automatic Merchandising Association, annual national convention and exhibit. The Rivergate, New Orleans, La.

Oct. 17-19:
Music Operators of America, national annual convention and exposition. Conrad Hilton Hotel, Chicago, Illinois.

January 27-29
AMUSEMENT TRADES EXHIBITION, London. World's largest and most important trade show for automatics.

March 2-4
NORTHERN AMUSEMENT EQUIPMENT AND COIN-OPERATED MACHINE SHOW, Blackpool, England. Large and important trade show for amusement equipment.

March 19-21
Music Operators of Michigan, annual convention. Weber's Inn, Ann Arbor, Michigan.

April 2-4, 1976
Wisconsin Music Merchants Association, annual spring convention and exhibition. Scotsland Resort, Oconomowoc, Wisconsin.

May 7-8
Ohio Music and Amusement Association, annual convention. Site not yet selected.

May 14-16
Music and Amusement Association [New York], annual convention. Stevensville Country Club, Swan Lake, New York.

Editorial

putting humpty dumpty together

Really now. It's enough to make an operator schizophrenic.

How is an operator who has a sizeable investment in both music and games and vending to decide which trade gathering and exposition to attend this year.

On one hand, there is the Music Oerators of American 1975 international show and business seminar in Chicago, which is larger than ever, according to MOA, with 87 exhibitors in 210 booths, a glittery stage show and a nuts-and-bolts seminar on controlling operations.

Then there is the National Automatic Merchandising Association's 1975 show and convention, the largest gathering of vending machine operators and the manufacturers who supply them, being held right here in New Orleans at the convention barn of the Rivergate.

A conscientious vending and amusements operator who wants to know what's in store for him would have to become two separate people to be able to fulfill his need for information, dialog and new products. Unfortunately, not many people can divide themselves that way and the resulting conflict is causing a crisis of decision among many operators.

Should they attend MOA so that they can keep abreast of the rapid technological changes occurring in the games industry. Or, should they attend NAMA so that they can keep abreast of the technological and marketing changes that are shaping the world of vending today? Should they try to catch a little of both shows and skip the valuable business contacts and dialog they could make at both gatherings?

Of course, not many people could afford or would want to try the last alternative. Frankly, they shouldn't be forced to make that type of decision in the first place.

For two industries that so complement each other in so many situations, it is a wonder the two organizations have not gotten together before this and arranged to have their conventions in the same city each year. It is a shame last year's coincidence of both gatherings being in Chicago at the same time could not have repeated itself again this year in New Orleans, for although we feel Chicago is the heart of the coin-op amusement industry, we do think MOA should go out into the world and use different host cities each year.

We understand from MOA sources, however, that both MOA and NAMA have their conventions booked through 1978 and that unfortunately, they don't often coincide in the same city, although they do coincide on dates.

We do not think that combining the two organizations is the solution. MOA needs to retain its identity for purely music and games operators as much as NAMA must retain it's individuality for purely vending operations.

But we do believe that the two groups should confer soon on arranging conventions in the same city or on different dates so that operators who would relish the opportunities available at both gatherings can take advantage of them.

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Distributor Inquiries Welcome

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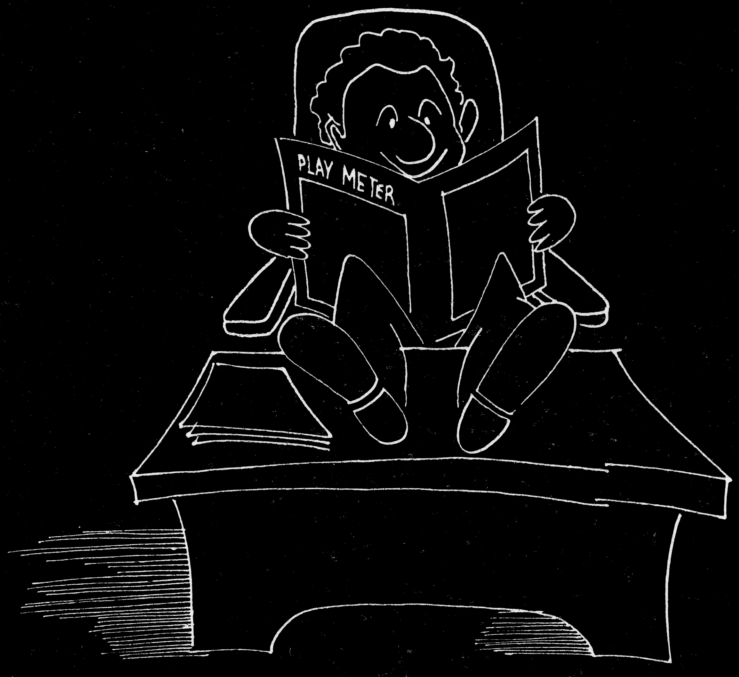

By popular demand, we are proud to announce that *Play meter* subscribers will soon be receiving current music charts and news *twice* a month. We realize that little happens chart wise in the course of a week's time. But a lot can happen in half a month not to mention a month's time.

For that reason, we at *Play Meter* feel it is to the benefit of our readers to be better informed as to the ever changing music scene.

In a further effort to make *Play Meter* the most useful trade publication available and to show our sincere appreciation to our subscribers, we will soon be publishing an interim music sheet listing all the top singles in the country. In addition, this new service will enable us to feature any fast breaking news in the music and games industry, thus fully complementing *Play Meter* coverage of the industry.

Remember, this new service will be for subscribers only. So act now and cash in on this added bonus for being a subscriber to *Play Meter*.

COIN INDUSTRY

PLAY METER

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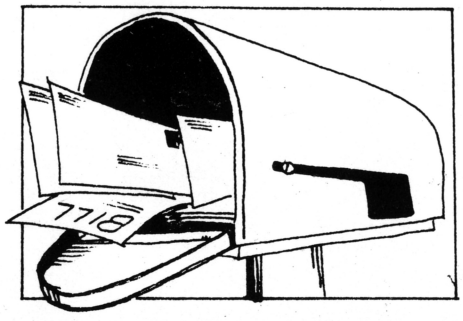
The only magazine you'll ever need



With all due respect to Mr. Randy Skelton and his "original copy" Texas-style table soccer table, the only original idea of his "Beat the Champ" promotion is the name itself. As early as June 1973, the Hanson Distributing Co., Minneapolis, Minn., fielded Bill Sumption and Tom Hansen (runner-up champions 1973 and 1974, U.S. Tournament Soccer Nationals). The basic difference in these promotions is that BIll and Tom demonstrated and explained techniques that made them the champs before issuing the challenge to all comers. Cash prizes, T-shirts, etc. were given to competitors who could beat the champs.

Kirk W. McKennon
Sales & Promotion Manager
Hanson Distributing Co.
Bloomington, Minn.

Your magazine is good and we like to receive it. Taxes in our state are bad. We pay four per cent sales tax on the gross proceeds. We pay four per cent on all new or used machines, four per cent on records used on machines and four per cent on the used records that come off.

ALso, cities and towns have from two to four per cent sales and use tax and all counties have from two to four per cent sales and use tax. All this in addition to state sales taxes and licenses.

J. Leonard Barnes
President
Barnes Music Co., Inc.
Selma, Alabama

Your magazine has a lot of information of great use to me. I like all the info on fixing the video games and on upgrading them via conversions.

I'd like to see a summary tabulation of all the video games (table type) along with screen size, whether sold direct or through a distributor and price information, number of players, features, etc., and the manufacturers addresses.

John Neufer
Owner
Today Games
Santa Monica, Cal

Congratulations on a great magazine with all the hopes of continuing success for you.

I would like to see more of the Technical Topics, dealing with servicing the video games. I would appreciate hearing about problems others have had with video games and what they did about them.

Gene Daniel
Manager
Holiday Music Co.
Lawton, Okla.

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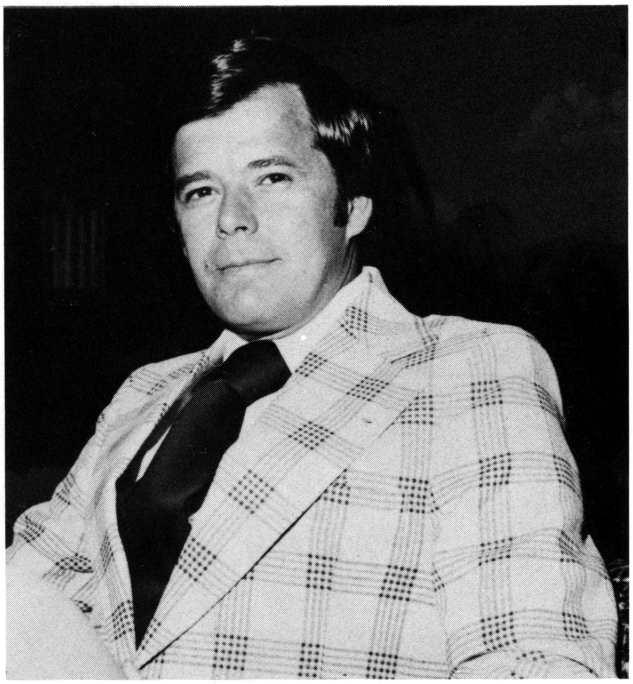
MOA president tells operators Alter attitudes,

A *Play Meter* interview with Fred Collins Jr., MOA president



"One of MOA's biggest accomplishments is its trade show, one of the largest of any industry...Another successful accomplishment this year was the mid-year seminar at Notre Dame."

From changing records on his dad's route in 1947 to owning an operation that covers a large portion of South Carolina, it was a long haul for Fred Collins Jr. of Greenville, S.C.

But today Collins is one of the more progressive operators in his state and for the past year he has served as president of the Music Operators of America, the international organizaton that helps this scattered industry protect its interests and keep in touch with changing technology and economic practices.

Collins began his coin machine career at age 12 on his dad's small jukebox route, taking care of the 40 or so machines and changing records, eventually running it for his father and helping him run the household, too, after his mother died. When he was 16, Collins dropped out of high school to help out with family problems. Later that year he married the woman to whom he is still married, Shirley, who is the mother of his four children, Fred III, Cathy, Felcia and Cindy.

Fred III, 21, and Cathy, 19, have even helped Collins with his present route, Collins Music Co., in recent summers, although the MOA president says he does not try to influence either one to join the business. "I want them to make up their own minds," he says.

But Collins didn't inherit his route from his father, either. "My father sold the business in 1950 because he didn't like to work nights and weekends any more," Collins notes. "After he phased out his business, I had an acquaintance who had a few machines and he asked me if I could fix them." Collins agreed to maintain the machines for his friend for 50 per cent of the profit. Eventually the two men put their money back into the business and built a good-sized route. Unfortunately, Collins adds, the partnership dissolved and Collins teamed up with another operator.

That later fell through, also, and at the age of 19, Collins went to work for Southern Amusement Co. for the next six and a half years. When Collins decided to start his own route in 1961, Southern's owner, Pete Sasso, helped him out by selling him machines on credit and fronting him money so that he could afford records for them. Since then, the two have never competed for accounts.

From that humble beginning when Collins operated old equipment on a shoestring, the Collins Music Co. has grown to about 50 employes in two localities and an additional cigarette route.

Because he has spent the past year sharing the lessons he's learned with operators all around the country in his capacity as MOA president, we felt we'd begin by asking him about his presidency.

PLAY METER: What is it like being president of MOA?

COLLINS: The president is the chief elected officer and presides over the board meetings and appoints the different committees that carry out the functions of the organization. Fred Granger is the hired professional administrator of the association. He does a fine job.

PLAY METER: What were some of MOA's greatest accomplishments this year?

COLLINS: We had satisfactory hearings on the copyright issue, but we have not yet made any determinations regarding a finalized copyright revision. One of MOA's biggest accomplishments is its trade show, one of the largest of any industry. There

[*See next page*]

are 88 exhibitors this year with 210 booths. Another successful accomplishment this year was the mid-year seminar at Notre Dame. We had the largest attendance ever of any industry-wide seminar. I believe the board will vote to continue the seminars because it was so successful this year. We only had one last year, but in previous years we had several.

PLAY METER: What was covered at this year's seminar?

COLLINS: They change each year and have different topics. This year the topics covered the general subject of the economics of doing business. And the seminar speakers, who are usually professors, have even ridden with operators on their routes to gather background information.

PLAY METER: Does the everyday operator have to have any kind of educational background before attending these seminars?

COLLINS: I don't think you would even have to have a high school education to understand these seminars. They are conducted on a level that almost anyone could understand. It has workshops and lectures. They break the group down into smaller ones so that they can discuss problems openly, Developing accounts, controlling operations, that sort of thing. The officiators at this seminar are actual professors at Notre Dame. They have both book and practical experience. Some guest speakers were Dave Apple, Bill Sexton, and Gerry Seaton; he will be on the seminar at the convention.

PLAY METER: What about membership?

COLLINS: We have had a continued membership drive. Our number is now over a thousand. Russell Mawdsley was chiefly responsible for that. His membership drive lasted all year. He's a great guy and did a great job in '74. We have continued our development of state associations. As you know Ohio now has its own convention and that charter was organized in 1974. Colorado and Arkansas were this year.

PLAY METER: Many of our readers are under the impression that MOA is strictly for members of the music industry, or operators of music machines.

COLLINS: Music Operators of America was called that in the days of its initial organization, but it is for people of music and games allied industries as well as vendors.

PLAY METER: Has there been any thought about changing the name so that it doesn't give that impression?

COLLINS: There has never been any board legislation on that matter. But, I do believe the MOA name is antiquated, if for no other reason than the fact we are now an international concern. We are no longer of America only. Perhaps we should call it Music and Games Operators International. As of yet, we haven't had any suggestion on it.

PLAY METER: How does one go about joining the MOA?

COLLINS: You have to acquire a membership application by writing to MOA, 228 N. LaSalle St., Chicago, Ill., and fill out name, firm address, size of operation, etc. Now, some peole may have an aversion to divulging the number of games they operate, but the only reason we ask that is because our newsletters are divided into classifications of over 50, over 100, etc. The dues start at $50 per year for those with under 50 machines and go up to 1,000 or more, which is $1,000 per year.

PLAY METER: What does the MOA have to offer today's operator? What are the advantages of becoming a member?

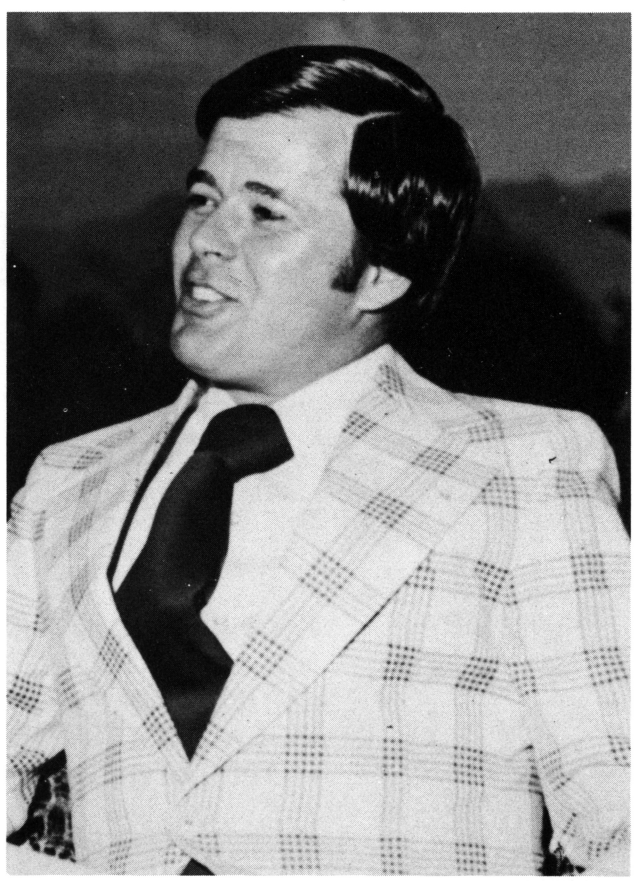
COLLINS: The purpose of MOA is to foster the interests of those operating coin-operated music and/or game machines, establish uniform rules and regulations in relation to federal laws and try to run our businesses productively. MOA maintains a public relations program that will acquaint the public with the jukebox and games industry's activities. At the national convention each year we bring people together for an exchange of ideas and introduction of new products. We have benefits like group insurance for the employes and dependents of members. We hold business seminars and meetings just like any other association for any other trade.

I think any time people come together for a common purpose with a common goal, you have to learn and it has to be beneficial to you. The people who aren't active don't know what they are missing because you get out of it exactly what you put into it. You can be a member and pay your dues or you can get involved and serve on one of the panels or committees.

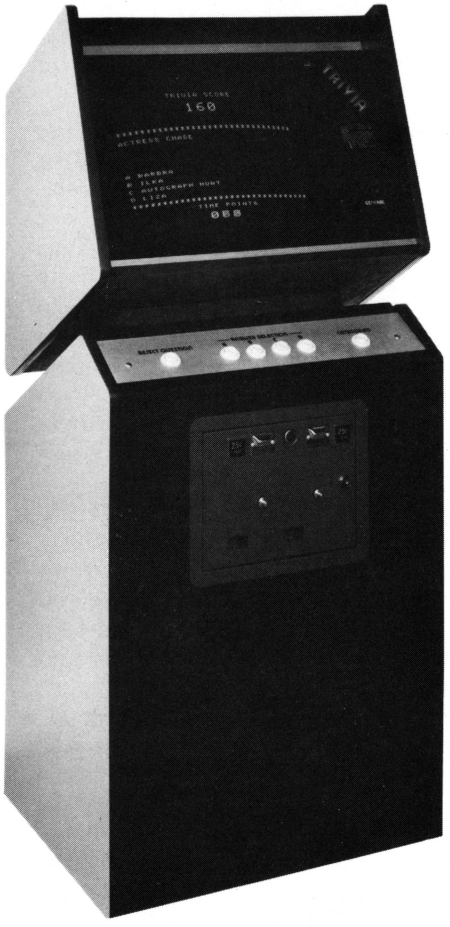
PLAY METER: What have you been doing this year?

COLLINS: This year I have been traveling around giving business talks to organizations and I have stayed strictly with the coin machine industry. Of course, I have stayed on the business end of the industry. That is what other operators seem to want to hear about--the

(Continued on page 17)



"the purpose of MOA is to foster the interests of those operating coin-operated music and/or game machines, establish uniform rules and regulations in relation to federal laws and try to run our businesses productively."



TRIVIA

BY RAMTEK

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- AN EXCITING NEW SEARCH AND DESTROY GAME
- 1, 2, 3, or 4 PLAYER GAME
- REALISTIC SOUND
- OPERATOR ADJUSTABLE GAME TIME

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Coinman

(*Continued from page 15*)

common problems facing everyone in the industry.

PLAY METER: What are some of the problems facing the operators around the country?

COLLINS: Regarding such things as commissions, sharing the profits--commission rates are changing for the better. The more successful operators are changing conditions. That has nothing to do with how large or small the operator is, but how successful he is with what he has.

PLAY METER: How are they going about making the changes in the commissions?

COLLINS: They are giving the location owner more service. They are charging for some services that other operators are giving away, like rotating equipment more often and using newer and more sophisticated equipment from which they can get a higher commission. Some operators are getting more money from jukeboxes simply because they are having to put the records on them and change them constantly. Some are getting front money. I was surprised to find that in some states some of the operators are getting up to 60 per cent. In some states, the front money ranges from $10 per machine to as much as $20 to $25.

This is such a people business that we sometimes lose sight of the reality of this business when we succumb to the economics of the operation. In this business, not only are the machines expensive, but good mechanics and good technicians are expensive and if you don't have good technicians, you will not be able to go to the location and do an efficient job. Some way, you have to be sure you can pay top wages so that you can assure the location owners of efficient service. You pay more, you get more.

Before I set up an arcade or game room, I get a $15 or sometimes $20 per machine deposit in front to cover the licensing which is up to $75 per machine. We sometimes have the location owner pay half of the license fee.

PLAY METER: What can the operator do about increased costs other than just pass them on to the location owner?

COLLINS: By changing the commission. That is about the only way it can be done. He has to pass those costs on or absorb them from his own profit. As a means of eliminating costs, we went to some of our operators we trusted and just gave them keys to the cash box.

PLAY METER: That is trusting.

COLLINS: We always like to have a contract with the location so that when we go a week without collecting the money, we take the key back and he won't be throwing us in the street.

PLAY METER: Do you have a meter on this cash box so that you can tell how much has come in?

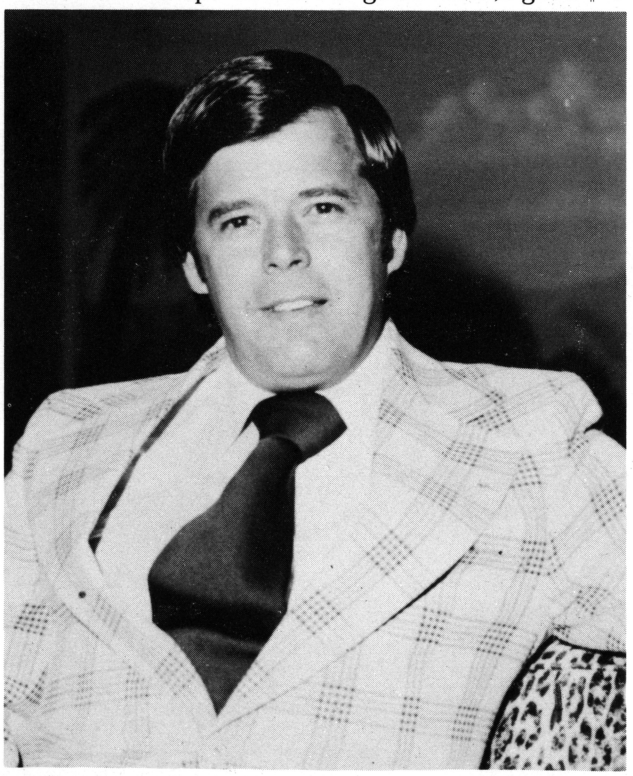
COLLINS: Of course, everything is completely coin-controlled. The phonographs and games both have an electro-mechanical meter. We merely place it in the coin circuit and it counts the number of coins. It is a simple matter of multiplication.

PLAY METER: What about table soccer and pool?

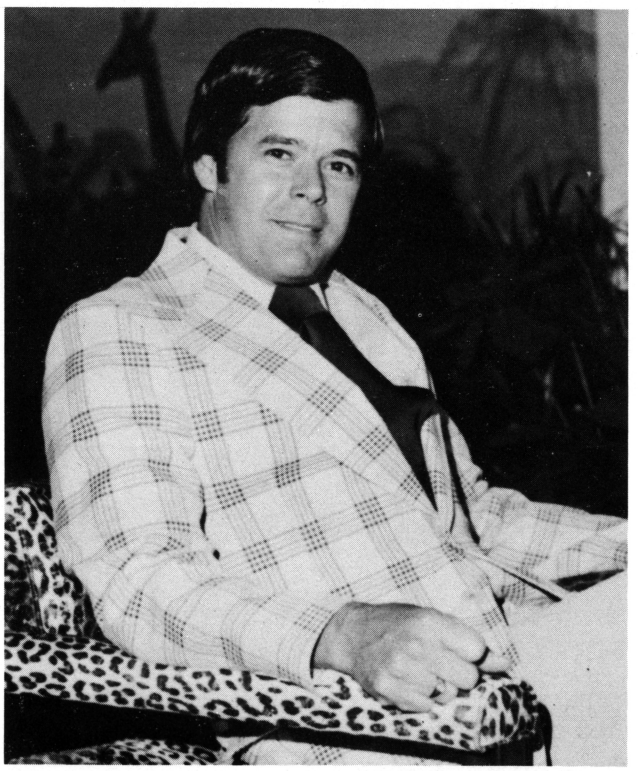
COLLINS: We put six volt meters on them. But most of our pool tables are electric drop, which already come with the meter. They have been around since long before I went into the business.

PLAY METER: You would be surprised at the number of people who operate machines who are not concerned with the counting of the coins. Of course, a lot of them collect their own money, but many don't.

(*Continued on page 66*)



"High unemployment naturally helps our industry...I do not feel we have been as closely affected by the economy in this end of the operation."



"We should change our own attitudes and try to change our customers' attitudes about the old standards of doing business and get into the new way. We have to use innovations, new ideas and new types of equipment."

Innovations characterize exhibits at largest MOA ever

"If you want to know what's new and what's happening in the coin-operated music and amusement industry, you'll find out at Expo '75," exclaimed Fred Granger, Music operators of America executive vice president, this month.

Granger may be accurate in his appraisal of the MOA's 1975 International Music and Amusement Machines Exposition, to be held Oct. 17-19 at the Conrad Hilton Hotel in Chicago. With some 87 exhibitors scheduled to display their wares (the most ever), an outstanding industry analyst scheduled for the convention seminar and a stellar line-up set for the Sunday night stage show, Granger and other MOA officials appear justly excited about the phemonenal potential for operators who attend to learn more about their industry, experience the best and newest of what manfacturers will be offering in the months to come and listen to some excellent musical artists.

Certainly, this year's Expo will feature some of the most innovative amusement concepts to be seen since the video paddle and ball first blipped into the industry consciousness. The evolving dominance of solid-state components and games plays a large part in the scenario shaping up in Chicago.

There will be a proliferation of video games manufacturers--some 23 of them--to be sure, but a number of companies will be introducing solid-state games of a new breed that could have a profound effect on the continuing evolution of the industry in the months ahead. Some of these new games utilize microprocessors instead of logic boards, computer pictures and holograms (three-dimensional pictures).

Major Manufacturers of San Mateo, Cal., for example, will be introducing two new upright arcade games that use a microprocessor (a super-miniaturized circuitry unit) instead of a logic board, as well as exhibiting their line of video games and a new designer cocktail table. Allied Leisure of Hialeah, Fla., will be showing the product predicted in the June-July *Play Meter*--the first solid-state conventional pinball

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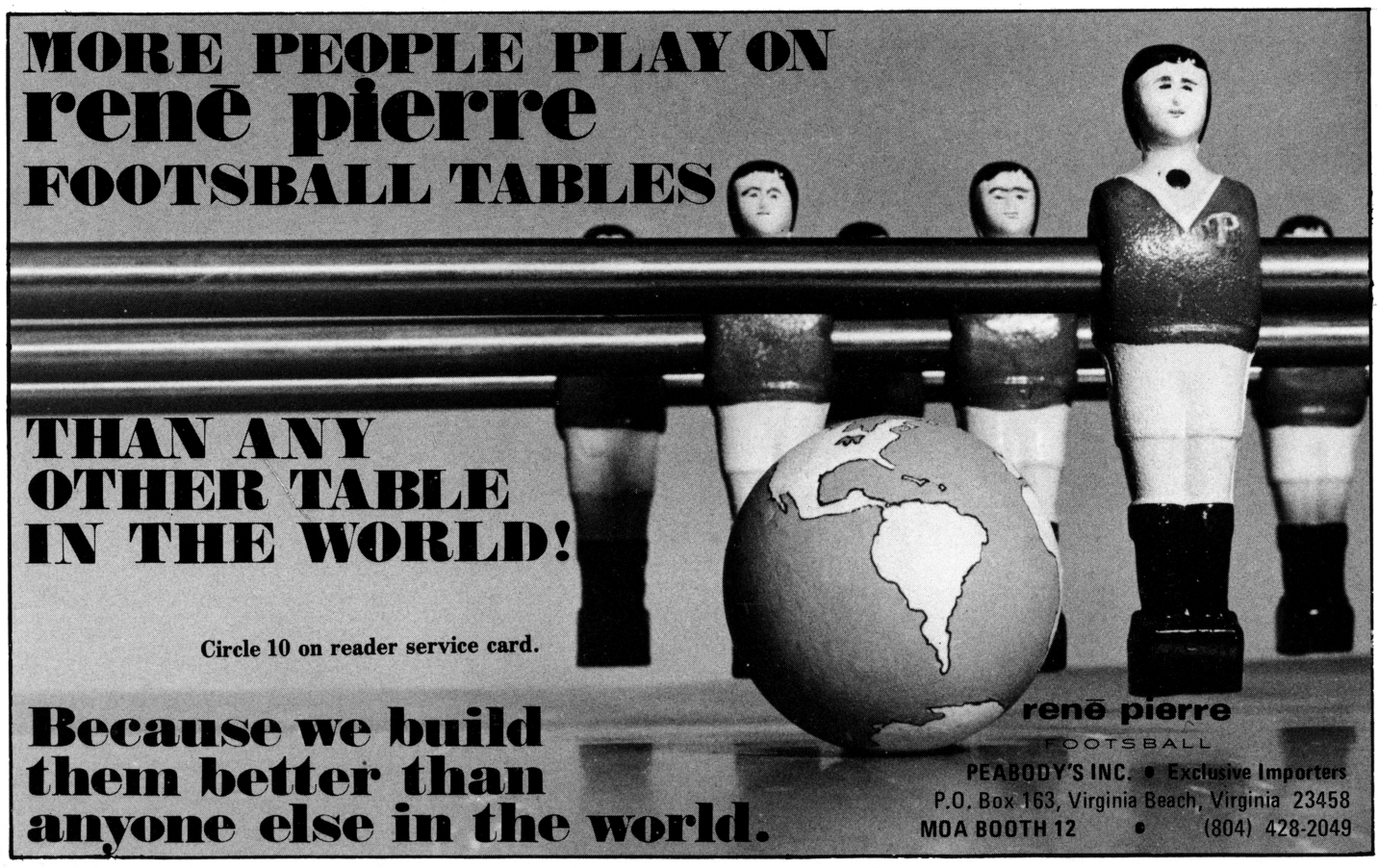

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game to be displayed in public to operators. This is the novelty games company's first venture into the flipper market and the new game will feature free-play and other conventional pinball features.

Two companies, PMC Electronics of Pennsylvania and Taito America of Chicago, have produced coin-operated computer portrait systems. The systems produce personal portraits through the use of a closed-circuit television camera, a monitor and a computer printer that produces the picture on computer "print-out" paper. PMC will also exhibit an electronic coin-op card table on which can be played stud poker or showdown, with both games having a free-play feature for the winning hand. Taito also plans to show a new gun game featuring first use of a hologram in a coin-operated amusement game.

California On-Line Computer Systems of Carmichael, Cal., hopes operators like their centralized computer game brain with terminals (the actual playfield monitor and controls). The central computer installation is capable of feeding any number of satellite terminals, the company says, and operators would have the capacity to choose and change 15 different games.

Meadows Games, which has acquired National Entertainment Co., will present its Refresh-O-Mat coin-operated mint vendor, a device hinted at by NEC's Dick Januzzi in a previous issue of *Play Meter*. The machine vends the popular miniature candy mints and can be placed atop cigarette machines. Play Master Inc. of Columbia, Mo., will have a new method of lighting pool tables on display, as well as their line of pool tables.

Atari's innovative leisure motto seems to be carried out in its three new presentations: Crash and Score, a pylon driving game; Steeplechase, an electronic horse racing game; Shark's Jaws, produced under the Horror Games logo and a video take-off on the theme of the popular movie. Shark's Jaws has the player, a video scuba fisherman trying to catch fish and the shark sneaking up behind him. The object is to elude the shark.

Another game inspired by "Jaws" comes from U.S. Billiards of Amityville, N.Y., in which the player is the shark. U.S. Billiards also plans to introduce an air J'ai-Alai game, a new air cushion game a bit larger than a pinball machine. The company's third new item will be a new line of pool tables called "English Leather."

Another innovative game comes from an Indianapolis firm called Komputer Dynamics, Corp., which will feature its Invasion Stratogy dual pinball game. The game places the players on opposite ends of the table and uses flippers, roll-overs and thumpers controlled by solid-state electronics. The opponents can disable each other's thumpers and front flippers.

Chicago Coin and Bally will be displaying their new flipper games and Chicago Coin said it may also have a surprise arcade piece. Fischer Manufacturing of California, Mo., will have a new line of pool tables "inside and out." Dynamo Corp. of Grand Prairie, Texas, not only will display its table soccer line-up, but will also present a new line of pool tables, featuring a "same-size" cue ball. Brunswick's Briarwood Division will feature a

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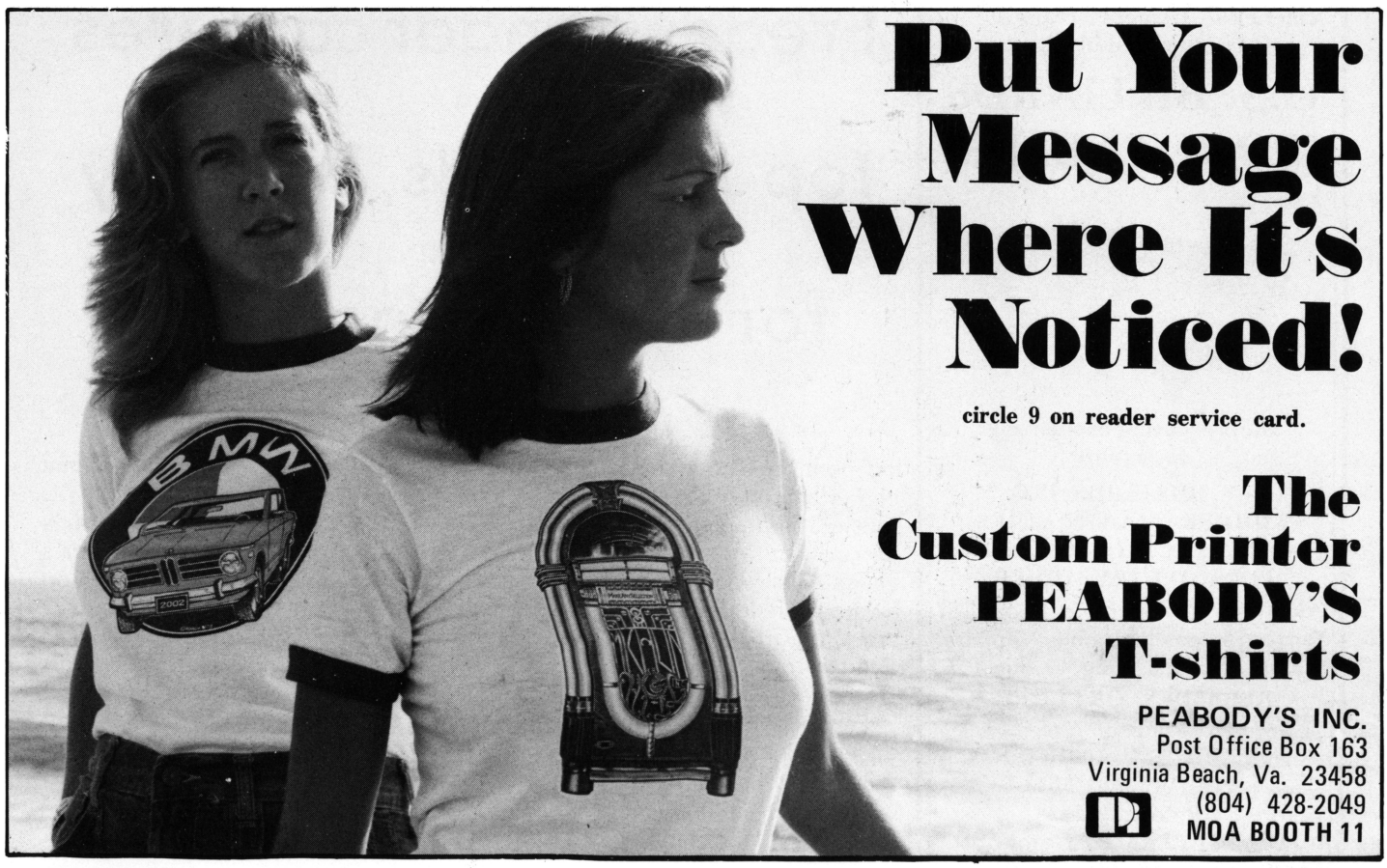

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hand-ball game.

Exidy, Inc. of Palo Alto, Cal., promises a new upright video driving game with a one-player/two-player option to the player. West Lake Systems of West Lake Village, Calif., will display one cocktail table and one upright video game on display and the product features five games in one. Nutting Associates has kept its "Project X" under wraps, but did not say it would have two other new games on view as well. Digital Games of San Dimas, Calif., will present its new motorcycle driving game, a video upright.

ACA Sales and Service of Los Angeles will introduce a new marketing method in connection with Bio Computer and Mountain West will have details on next year's national Tournament soccer tour, which they say will be worth more than ever.

Other exhibitors were less willing to confide what their new developments might be, but a quick examination of the preceding list indicates that there will be plenty of exciting innovations on hand for the industry's operators.

Aside from the feast of visual and auditory stimulation on the exhibition floor, MOA's Expo is also offering operators a stimulating seminar Friday, Oct.17, from 3:30 to 6 p.m. about "Controlling Your Operations," which will feature Dr. John R. Malone, associate dean for graduate study in the College of Business Administration, University of Notre Dame, as the lecturer.

Exposition Seminar Committee Chairman James I. Mullins characterized this seminar as a "rare opportunity not only for operators, but for anyone connected with this business who wants to understand the operator and his problems better." The seminar speaker joined the Notre Dame faculty after a successful career in business and combines a solid theoretical expertise in marketing with practical experience, Mullins remarked.

In his lecture, Malone will give an overview of the economic conditions of the country and follow it with the main thrust of his presentation, which will explain why running a business profitably is more and more dependent on tight control of its operations and why a person should have a practical "game plan" for his business.

The convention will also provide a gala banquet and stage show on the last night, Sunday, Oct. 19, beginning at 7 p.m. and going until 1 a.m. (See separate story about the stage show.) Aside from that, there will be much conversation and sharing of ideas about the industry between the hundreds of manufacturers, distributors and operators in attendance.

MOA's Granger calls the 1975 Exposition the largest ever for MOA and MOA President Fred Collins says it is evidence of the "phenomenal growth of the national association." Needless to say, there will be a whole lot of games, fun, music and talk going on for three days in the 50,00-square-foot exhibition area and it will all click to make the industry grow.

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Freddy Fender captures top JB awards, will play for MOA stage show

Operators who atend the banquet and stage show at this month's Music Operators of America Exposition will get to see the winner of this year's Artist and Record of the Year awards--Freddy Fender, recording artist for ABC - Dot Records.

Fender, recording artist for ABC-Dot records.

Fender will appear in person to accept his awards.

The awards, voted on each year by the MOA membership and the MOA Awards Committee, go to the the artist and record who earned the most on the nation's jukeboxes.

Other winners in this year's balloting were John Denver's "Thank God I'm A Country Boy" on RCA Records for Jukebox Country Record of the Year; Carl Douglas' "Kung Fu Fighting" on Twentieth Century Records for Jukebox Soul Record of the Year; and Billy Swan's "I Can Help" on Monument Records for Jukebox Pop Record of the Year.

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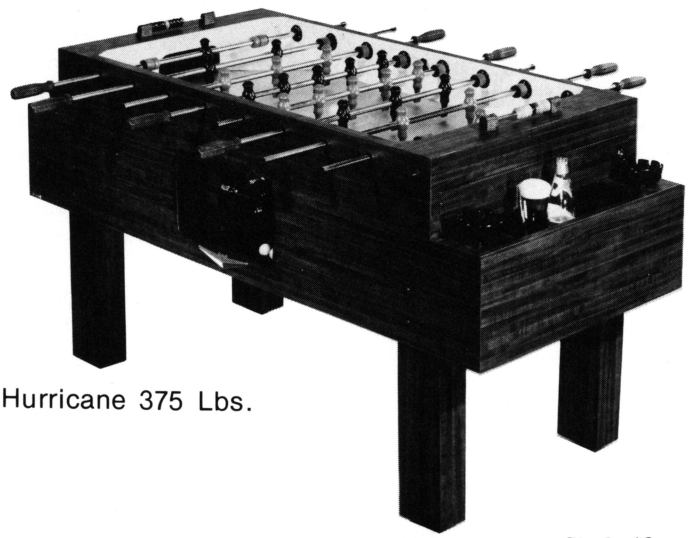

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Fender, Bennett, Rich headline upcoming Chicago shindig

A legendary Chicano from Texas, a silver-maned Arkansas boy and the son of an Italian grocer headline this year's Music Operators of America stage show.

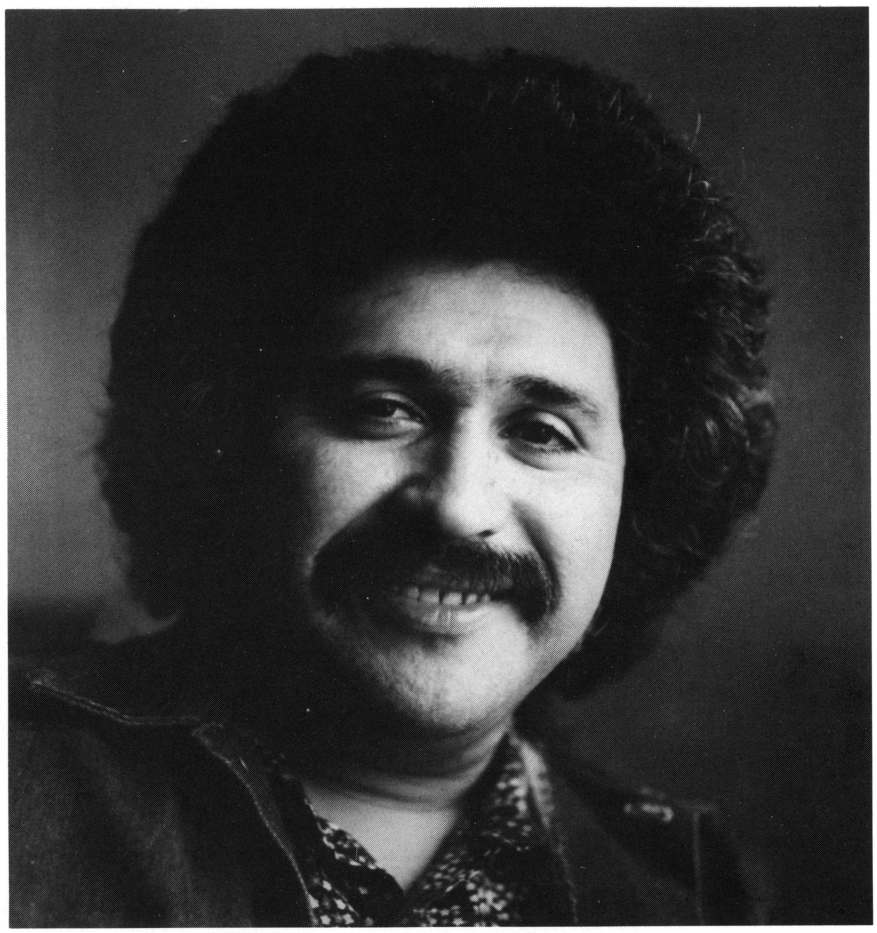
Music of several varieties to suit varied tastes appear to be in the offering for MOA-goers who attend the gala banquet and show the last night of the annual industry convention-exhibition, Sunday, Oct. 19.

The winner of the 1975 titile of Jukebox Artist of the Year and singer of the 1975 Jukebox Record of the Year, Freddy Fender, will accept his awards in person, MOA and ABC-Dot Records announced. And the TexMex hero will perform for the MOA audience.

Fender, who became a Texas legend when he recorded "Wasted Days and Wasted Nights" in 1959, was named Artist of the Year and his hit "Before the Next Teardrop Falls" was voted Record of the Year by MOA members and the MOA Awards Committee.

Born Baldemar Huerta in San Benito, Tex., Fender began his hard-won career in rhythm and blues, becoming known at one time as "the Mexican Elvis" for his Spanish language version of "Don't Be Cruel." While he was a star among "my people" in the late '50's, American mainstream music wasn't quite ready for him and he continued to play the Southern club circuit, working sessions with other artists and grinding out regional recordings, including a few for Houston's Huey P. Meaux, a man known in the music industry for his getting on record many legendary Cajun and other ethnic artists.

After serving slightly over three years in Louisiana's hellish Angola State Penitentiary for a Baton Rouge drug bust in 1960 that Fender claims was set up, Fender went back to the club grind, occasionally considering quitting and occasionally working day jobs to supplement his income. Then in 1971, Doug Sahm, another legendary Texas musician, spread Fender's name by recording "Wasted Days" and dedicating it to Freddy. The second boost to Fender's release from the club grind came when his old friend, Huey Meaux, asked him to cut a few country-flavored songs, including a combined Spanish-English "Before the Next Teardrop Falls." Regional response to the track was so overwhelming that it was soon leased for national promotion, landing Fender in the Top 20 of most of the country's music charts.



Freddy Fender

Another music legend, equally familiar with headbusting honky-tonks, is making a return appearance at the MOA show. Charlie Rich, the "Silver Fox" and winner of last year's jukebox record of the year and artist of the year titles, returns by popular demand, according to MOA Executive Vice President Fred Granger.

Like Fender, Rich has paid his dues in the music industry. After a futile attempt at farming in Arkansas in the mid-50's, Rich began playing area piano bars and after-hours joints and he and his wife Margaret Ann began writing songs. After recording some at home and playing them for a Sun Records representative he met at a party one night, Rich worked as a session man for the record company. As the company's position in the rock world began to decline, Rich cut a couple of records which fared poorly. A third one, however, brought him his first hit.

But none of his follow-up songs garnered the same success. He later left Sun, went to RCA, where a minor hit called "Big Boss Man"

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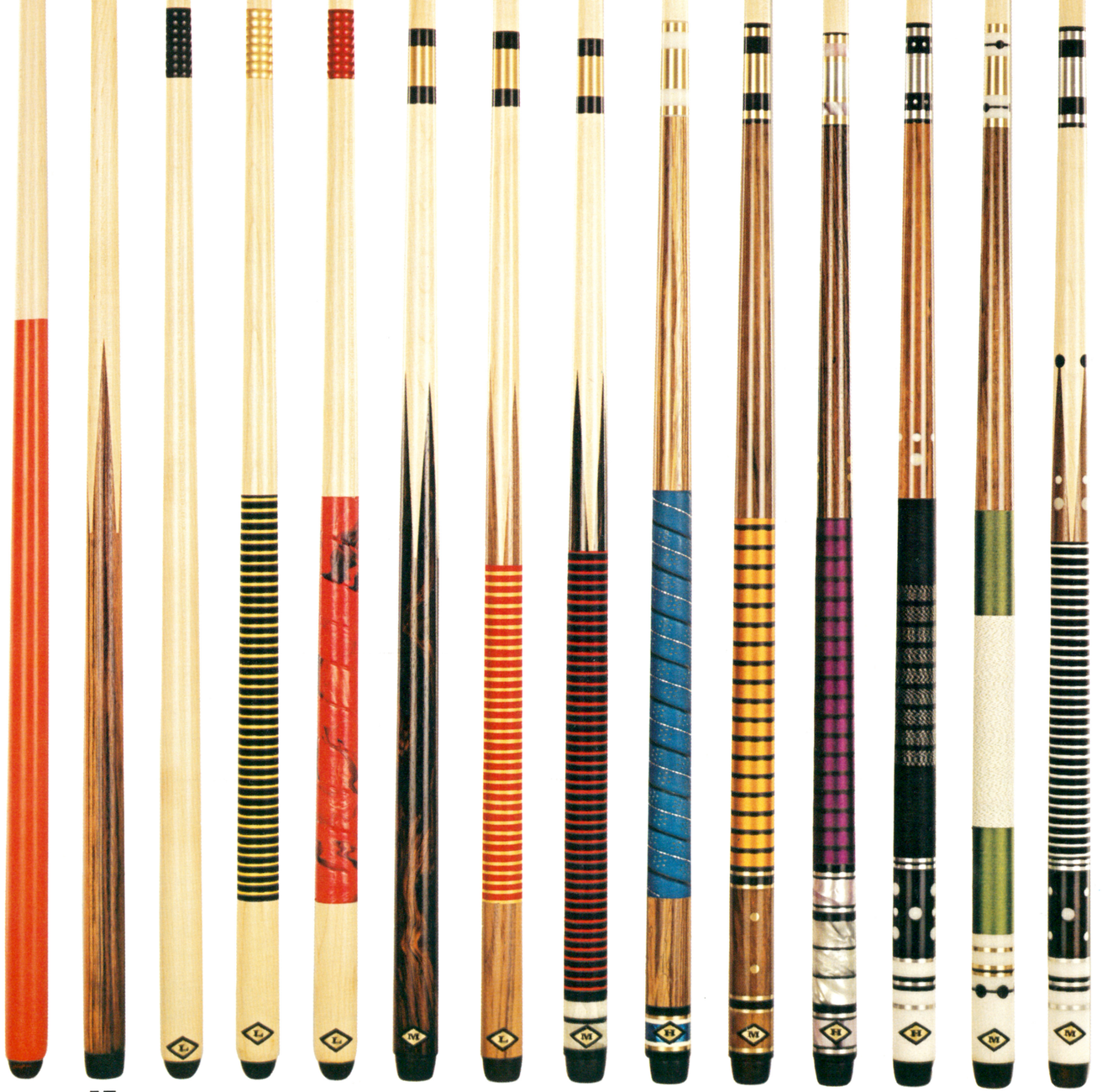
Valley



57P

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504 - A four prong cue with brass-to-brass joint surrounded by black fibre and in a gloss finish. Available in light, medium, and heavy weights.

505 - A nylon wrapped four prong two piece cue with the new brass-to-brass joint. Available in assorted color wrap and light, medium, and heavy weights.

506 - Natural colored butt plate and nylon wrap of assorted colors makes this four prong two piece cue a true value with its high quality. The standard brass-to-brass joint and gloss finish complete this cue. Available in light, medium, and heavy weights.

507 - This leather wrapped, polished brass-to-brass joint, pearlized butt plate and high gloss finish all spell quality for this two piece cue. Available in light, medium, and heavy weights.

508 - Polished and finely finished, combined with a brass-to-brass joint, nylon wrap, brass rings and dots on the handle gives a truely fine appearance. Available in medium and heavy weights only.

509 - Color coordinated joint, butt plate and nylon wrap that all harmonize in a high gloss finish. This cue has a metal-to-metal joint and is available in light, medium and heavy weights.

510 - Now Valley has added a look and feel of richness with its many dots, polished metal-to-metal joint, nylon wrap variations and a butt plate styled to make a finely finished cue. Available in light, medium, and heavy weights.

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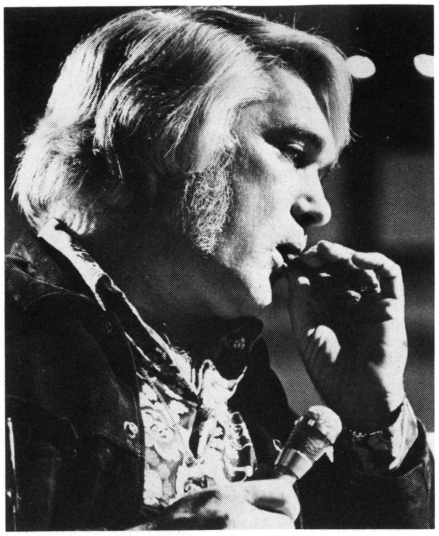
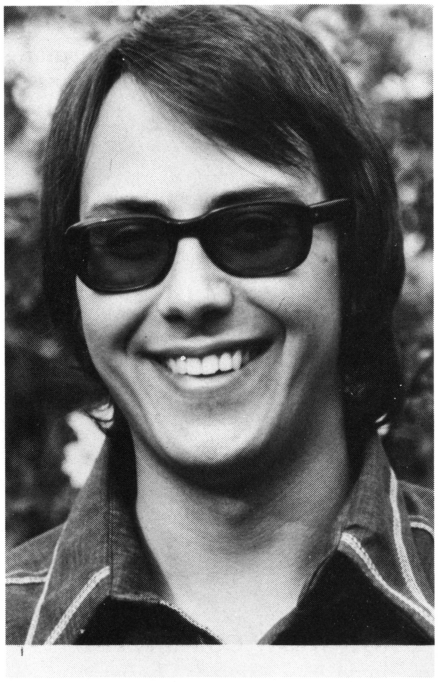


Charlie Rich

Tony Bennett

Tommy Wills



David Wills

Mara Lynn Brown

[*Continued from previous page*]

kept him going. Then in '65, he scored on Mercury with "Mohair Sam." But the same succession of poor follow-ups returned. It wasn't until 1972 that Rich scored big again with a Top 20 song called "I Take It On Home." Then, in 1973, Rich recorded "Behind Closed Doors" and the dam burst. His successes since then are history and he continues to make his very own personal musical statements that music lovers everywhere recognize as Charlie Rich.

Adding to the immense talents of Rich and Fender in the MOA show will be one of the most durable and distinctive singers in the popular field--Tony Bennett. His velvet tenor as strong today as ever can tackle any song and lend his distinctive flavor to it. As two reporters in the *Miami Herald* said of him earlier this year, "Unlike Sinatra and other pop singers who sometimes slip into the newest musical mode, Bennett can carry off a contemporary tune without sounding as if he's striving to be 'with it'." Bennett's musical tastes do not force him to try to act cool. He performs because he enjoys and relishes all forms of good music.

Joining in the musical festival at MOA will be Epic recording artist David Wills, performer of "A Song On The Jukebox." Wills was signed to Epic by Charlie Rich's manager, Sy Rosenber, after Wills won a $1,000 prize at Tennessee's Country Music Festival in 1974. Also on the bill will be last year's popular MOA show stars saxaphonist Tommy Wills and the youthful singing group Life.

Rounding out the list of performers is 23-year-old Mara Lynn Brown, a Chicago native who has worked in the Chicago Ballet Co., played night clubs in New York and the West Coast, handled several commercials and performed in such musicals as "Damn Yankees" and "Bye Bye Birdie."

Pulling the entire show together as emcee will be comedian Billy Kelly.

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Computer 'picture' units ignite interest, marketing questions

By RALPH C. LALLY II
EDITOR AND PUBLISHER

As of press time, we understand that three companies plan to display the latest of their "big ticket" offerings at the MOA extravaganza in mid-October.

Undoubtedly, these products--rather sophisticated portrait systems that employ a live closed-circuit tv camera and a computer print-out device--will cause some energy-charged conversations among MOA goers.

The three companies preparing to exhibit these "computer portrait" systems are excited about the prospects for them and during September, I had the opportunity to see one of the systems in action in "Old Chicago," the world's first combined amusement park and shopping mall (the mall is built around the park) in Bolinbrook, Ill.

Taito American Corp. has a computer portrait "installation" in the mall complex that allows the customer to sit in front of closed-circuit tv camera while the camera transmits the image to the computer print-out unit. The unit reproduces the image in a half-tone effect by typing out typographic and computer symbols on a sheet of computer paper.

To get the half-tone picture of himself, the customer pays about $3. To the operator, this means about a $2.98 gross profit because the gross cost of the product is only two cents. The entire process takes five to seven minutes. The total cost of the system to the owner, we were told, could range from $5,000 to $20,000 when it goes into actual production.

Taito's installation in the Old Chicago mall requires an attendant, as will the one Atari supposedly has developed PMC's will be coin-operated.

Taito's merchandising idea in the "fun" shopping center is to occupy space in this retailing complex that surrounds 31 Disneyland-type rides and attractions, as well as live entertainment, and lure passersby into letting the computer take their picture. The idea is apparently working well, according to Ed Miller, president of Taito America, and customers are smiling and laughing their faces into the computer.

The products seem a wise investment for investors or entrepreneurs, but its successful application to the average games operator's market is doubtful from my observations. Most route operators simply do not have access to the high volume locations like Old Chicago, which seems to me to be the only type of location that would justify such an expensive investment.

But the idea has caught the attentions of at least three manufacturers: so there may be a substantial future for the computer that prints pictures.

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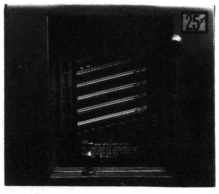

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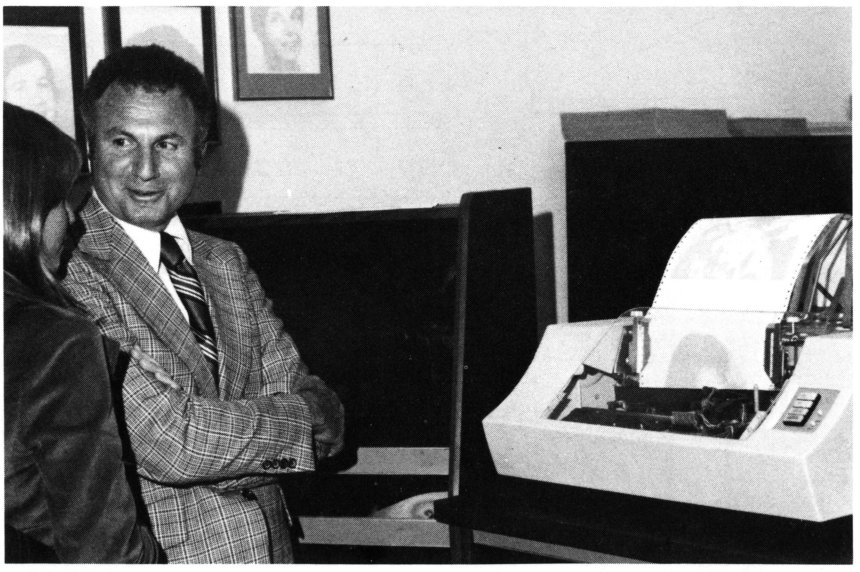

TAITO AMERICA'S Computer Portrait System attracts a curious couple in Old Chicago who watch in fascination as a portrait of a girl holding her dog is being printed out on a computer type printer.

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ABLOY INC. 6212 Oakton St., Morton Grove, Ill. 60053	33
ALLIED LEISURE INDUSTRIES INC. 245 W. 74th Pl., Hialeah, Fla. 33014	P14 & 15
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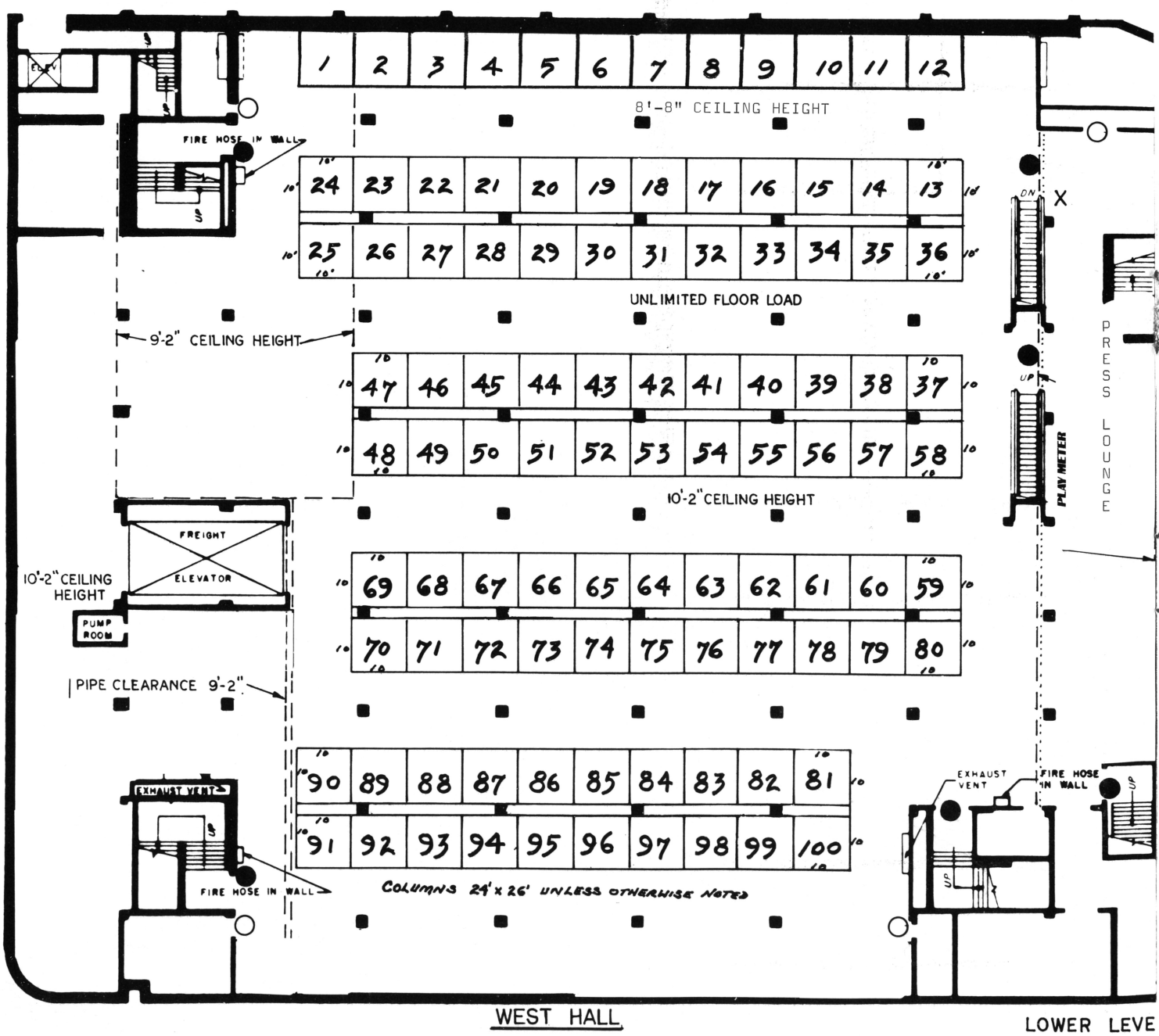
BALLY MFG. CORP. 2640 Belmont Ave., Chicago, Ill. 60618	146-150



All booths 10' x 10' except where noted.

Exhibitor	Booth
R.H. BELAM COMPANY, INC. 51 Madison Ave., New York, N.Y. 10010	187
BRANDT, INC. 705 South 12th St., Watertown, Wis. 53094	48 & 49
BRIARWOOD DIVISION, BRUNSWICK CORP. One Brunswick Plaza, Skokie, Ill. 60076	112 115
CALIFORNIA ON-LINE COMPUTER SYSTEMS 6233 Fair Oaks Blvd. #7, Carmichael, Cal. 95608	46
CAROUSEL INTERNATIONAL CORPORATION P.O. Box 410, Lake Ozark, Mo. 65049	25 & 26
CENTURY INDUSTRIES P.O. Box 348, Blue Bell, Pa. 19422	9-10
CHICAGO DYNAMIC IND. INC. 1725 W. Diversey, Chicago, Ill. 60614	139-145
JAMES CLEMENT MFG. CORP., 1705 Winchester Rd., Box 390, Cornwells Heights, Pa. 19020	44

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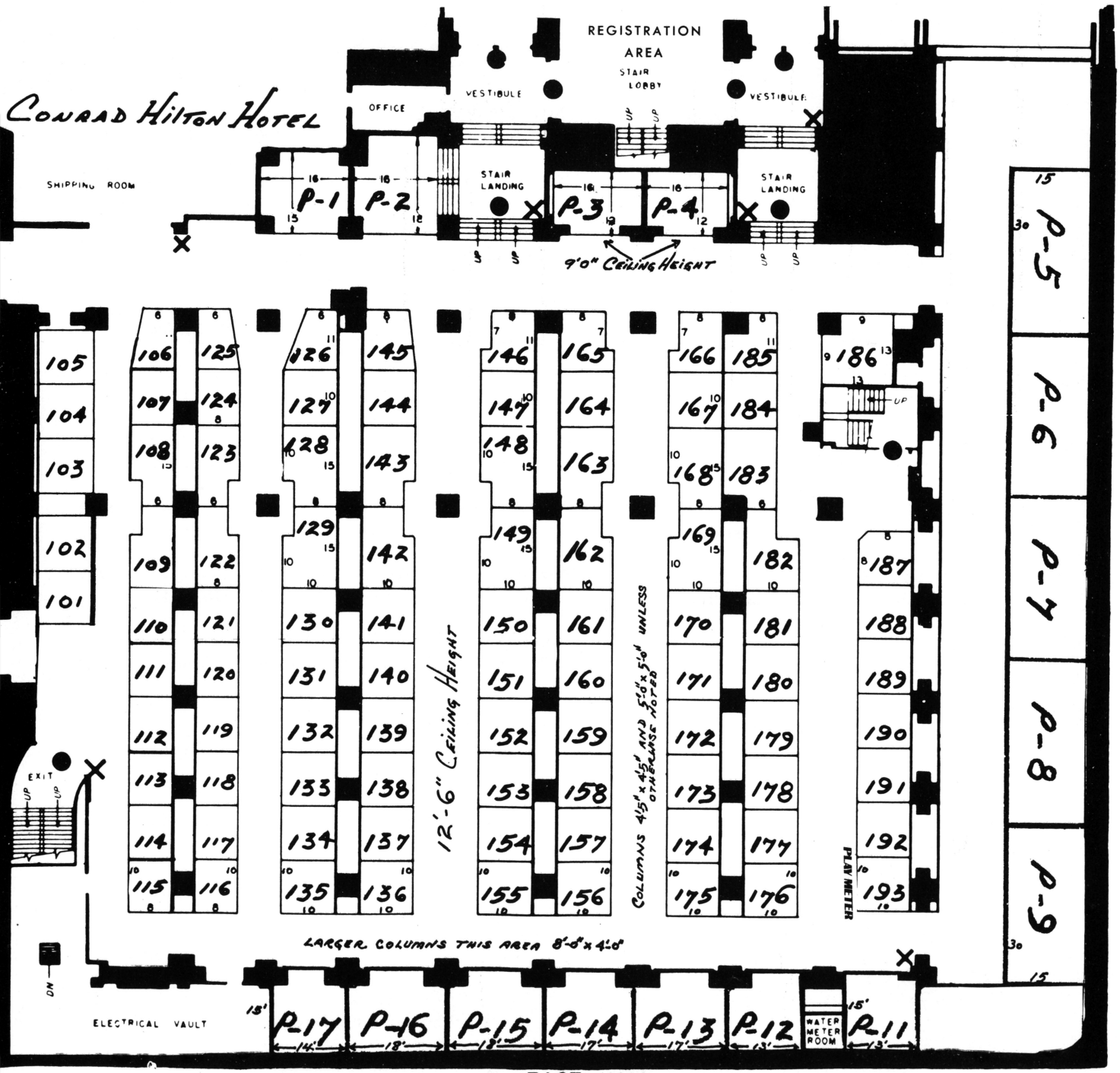

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PLAY METER

ON HOTEL
ILL.

Exhibitor	Booth

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COLUMBIA/EPIC RECORDS 186
51 W. 52nd St., New York, N.Y. 10019

CONTROL SALES 39-40
2500 Devon Ave., Des Plaines, Ill. 60018

COUNTRY INTERNATIONAL RECORDS ..... P 10
353 W. 57th St., New York, N.Y. 10019

D & R INDUSTRIES, INC. ..... P 1 & 2
7111 N. Capitol Dr., Lincolnwood, Ill. 60645

DEUTSCHE WURLITZER GMBH ..... P 7
Postfach 52, Hullhorst, W. Germany 4971

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545 Terrace Dr., San Dimas, Cal. 91773

DIVERSE PRODUCTS INC. 116-118
2 W. Bergen Pl., Red Bank, N.J. 07701

DYNAMO CORPORATION 133-135
1805 S. Great Southwest Pkwy., Grand Prairie, Tex.

EBSCO AMUSEMENTS, DIV. OF EBSCO INDUS. P 11
EBSCO Bldg., Red Bank, N.J. 07701

EBONITE CORP. 109-110/121-122
14000 N.W. 57th Ct., Miami Lakes, Fla. 33014

EDCOE MANUFACTURING & SERVICE CO. 50
9512 Jefferson Blvd., Culver City, Cal. 90230

ELECTRA GAMES INC. 55-56
2570 United ln., Elk Grove Village, Ill. 60007

ELECTROMOTION, INC. 73-74
6 Winside Dr., E. Allen Industrial Pk. Bethlehem, Pa.

ELECTRONIC CONCEPTS 96
4867 Mercury St., San Diego, Cal. 92111

EMPIRE DISTRIBUTING, INC. 154-157
120 S. Sangamon St., Chicago, Ill. 60608

EXIDY, INC. 51-52
166 San Lazaro St., Sunnyvale, Cal. 94086

FASCINATION LTD. 100
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FISCHER BILLIARDS, DIV. OF Questor .. 13-15/34-36
Box 50, California, Mo. 65018

J. F. FRANTZ MANUFACTURING CO. 191-192
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GREMLIN INDUSTRIES, INC. 90
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604 Main St., Davenport, Iowa 52803

KOMPUTER DYNAMICS CORPORATION 24
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KURZ-KASCH INC. 95
2876 Culver Ave., Box 1246, Dayton, Ohio 45401

LEISURE SPORTS SYSTEMS, INC. 57-58
322 Barnes Dr., Garland, Tex. 75042

LOEWEN-AUTOMATEN GMBH & CO. KG ..... P 5
Im Tiergarten 20-30, Box 168 653 Bingen/Rhine, W. Western Germany [06721] 15202

MAJOR MANUFACTURERS, INC. 85-87
1700 S. Amphlett Blvd. Suite 200, San Mateo, CAl.

MEADOWS GAMES, INC. 37-38
181 Commercial St., Sunnyvale, Cal. 94086

MICRO MAGNETIC INDUSTRIES 94
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MIDWAY MANUFACTURING CO. 151-153
10750 W. Grand Ave., Franklin Pk., Ill. 60131

MIRACLE RECREATION EQUIPMENT CO.
P.O. Box 275, Grinnell, Iowa 50112

MIRCO GAMES, INC. 119-120/130-132
1960 W. North Lane, Phoenix, Arizona 85021

MOUNTAIN WEST, INC. ----- 59-61/78-80
7930 Occidental Ave. S., Seattle, Wash. 98108

NATIONAL VENDORS ----- P 4
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NATIONWIDE SOUND DISTRIBUTORS 138
207 12th Ave. S., Box 1262, Nashville, Tenn. 37202

NU-LOOK PRODUCTS 84
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NUTTING ASSOCIATES, INC. 64-65
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O.B.A., INC. 5-6
1215 Slocum St., Dallas, Tex. 75207

PMC ELECTRONICS CO., INC. ..... P 12-13
1120 Industrial Hwy., Southampton, Pa. 18966

PAYNE'S SPECIALTIES 29
7130 Forest Lane, Dallas, Tex. 75230

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Silicon Gulch cowboys aim to be top guns of games

By Sonny Albarado
Associate Editor

Nestled in the electronically fertile Santa Clara Valley--known as "Silicon Gulch" to the space cowboys who ride herd on computers and electronic components there--is an unusual ranch where microprocessors and integrated circuits are warped to create futuristic fantasies of fun.

While most of Silicon Gulch's manufacturing caboleros are reknowned for pure-bred IC's, microprocessors and other miniaturized building blocks of the computer-space-defense world, the honchos at the Atari Inc. spread are committed to the future of R & R, "to the development of new technologies for games rather than bombs," as Atari founder Nolan Bushnell once quipped.

That commitment to new technologies is exactly what makes Atari unique among the coin-operated games manufacturers, believes Joe Keenan, president of the "Innovative Leisure" company. "The amount of money we spend on developing new technologies and always have spent," Keenan feels, accounts for Atari's prominence in the coin-op games field.

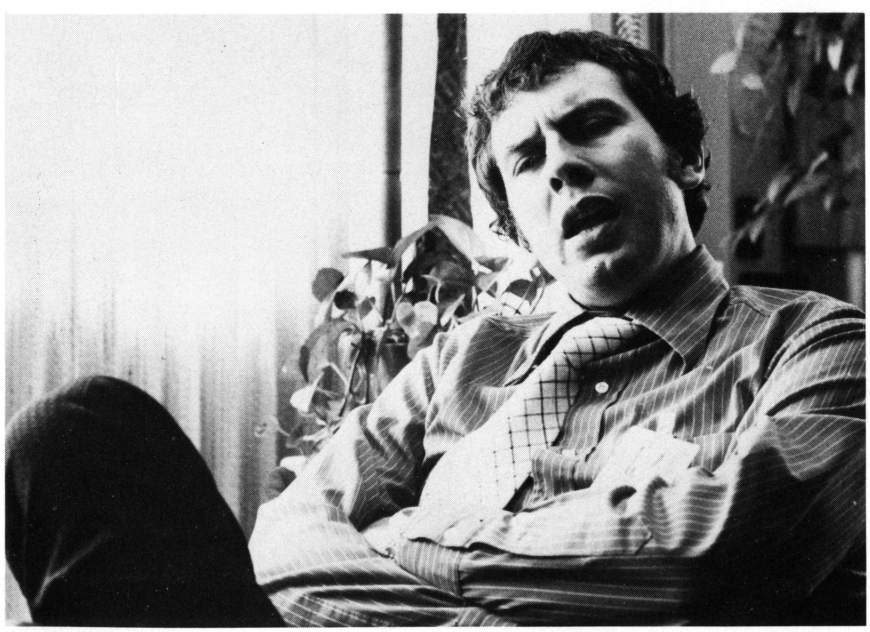
"We aren't pointing any fingers at anyone else in the industry. But as an example: When Pong was built, 26 other companies started building the same sort of game. For the whole time it was on the market, Atari was busy developing a new type of technology for future games, putting a lot of its earnings from the early games into that.

"We don't see that in the rest of the games industry. They don't put anything away for future engineering expenses. That is the differenc I see--the commitment to the future; looking for things that are barely

[*See next page*]

THROUGH THE looking glass--A visitor to Atari Inc.'s Los Gatos, Cal., plant passes through this intriguing portal to enter the realm of electronic fantasies it has created.

GENE LIPKIN, Atari vice president of marketing [left], enjoys a spin at an Indy 800 with other Atari employes.



ATARI BOARD Chairman Nolan Bushnell explains the philosophy upon which he operates his creative venture.

Silicon Gulch

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filling the realm of the electronics market and applying them to coin-operated machines," Keenan says.

One of those new applications from the electronics market is the LSI (large scale integration) chip, a "miniature computer" about the size of a watch that founder Bushnell believes "will allow pioneering in new game concepts." In fact, Atari has already reduced the original printed circuit board used in Pong to a single LSI chip and installed the chip in a new home game that can be used to create color Pong on any color television set. The product will be marketed by Sears, Bushnell and Keenan said.

It is the development of a consumer market for new Atari products that Bushnell and Keenan believe will keep Atari the dominant force on both the consumer and coin-op fronts over the next four or five years.

"In four or five years," Bushnell asserts, "we'll be the dominant force in the coin-op amusement field and we'll be the dominant force in consumer electronic games.

And each of those markets may someday surpass the $150,000 mark, Bushnell predicts, putting Atari in the same league as Bally Manufacturing Co. insofar as dollar volume play a part in a company's dominance or prominence in a market

Keenan concurs with Busnell's and Lipkin's assessments of the future and of the firm's current volume. "I see more new things coming to the market in the next five year," he adds. "with more new games, more new types of games and a large consumer gain. They will be similar products, of course, because the consumer end and the coin-op end will complement each other."

That complementary situation between the two divisions of Atari will be an important part of developing the new technologies that LSI's and micro-processors provide, notes Vice President of Research and Development Al Alcorn, called "Grandfather of Pong" and one of Bushnell's colleagues in the devlop-

(*Continued on page 34*)

Realizing fantasies:

How Atari builds games

Although they often seem to be the product of some peyote-crazed sorcerer, Atari and Kee games do not appear in a puff of smoke.

Although some of the ideas for new games are formed in skull sessions deep in the bowels of an old Los Gatos prune factory-turned saloon, Atari-Kee's board chairman, president, research and development vice president and others continually discuss new game concepts and add to or discard from the stable of some 60-70 game ideas the company keeps on file, according to Atari founder and board chairman Nolan Bushnell.

"The way a product flows," explains Al Alcorn, vice president of R&D, "is NOlan, Joe (Keenan) Gene (Lipkin), me and a few others like Steve Brisoc, veep of engineering, draw up the ideas for games.

"Then we decide how to implement specific ones. Implementation may involve a new technology or it may involve a new process. If if does, this is where I would come in, to actualize the new technology or process," the jovial, bearded Alcorn says.

From there, the game concept and the developed technology go to the Atari-Kee engineering department, where a team of experts apply the technology to a game design and cabinetry. After it's off the drawing board, explains Gil Williams, vice president of manufacturing, a new game becomes his project.

From the circuit board and component storeroom, Williams' workers issue the "brains" of the new game in daily batches of 100. "We normally do 200 boards a day; so we issue two blocks of boards, chips and components a day," he says. The PC boards themselves are baked in a special oven for 24 hours before they are put on the assembly line in order to make sure they are clean and dry. Simultaneously, an IC testing device, which cost the

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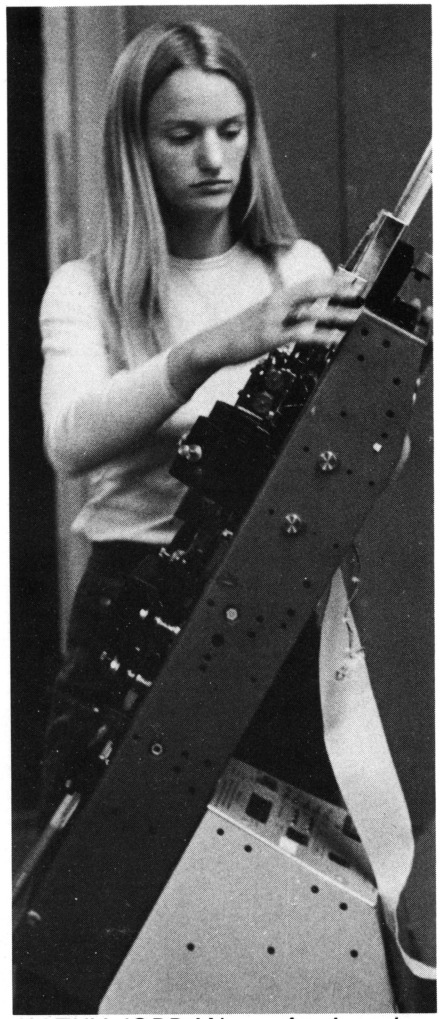

KATHY JORDAN, an Atari worker, operates the IC sorter, which separates good IC's from bad ones.

AN OVERVIEW OF the Los Gatos circuit board assembly and testing complex.

ment of that pioneering game.

"IC technology," Alcorn explains, "is limited by the fixed price of coin-op games and you can't practically develop custom LSI's for that field. The trouble is that it is extremely expensive to build that first chip. One can cost anywhere around $50,000 just for development. It's pretty hard to pass on that kind of cost in a video game, especially when it takes a year to develop one of them. With the consumer division, however, we can justify those kinds of tooling costs and hopefully spin off some of those chips to the coin-op division."

Although they're expensive to develop, Bushnell adds, the LSI's big advantage is a reduction in the cost of a game once the chip has been produced. Another huge advantage of the tiny widgets from the manufacturer's viewpoint is that they're practically impossible to reverse engineer. "Even if they figure out some of the microscopic circuitry, they still can't do it because a lot of it is laid down in ion diffusion layers, which you can't see," he smiles.

But the commitment to new and stranger technologies for better amusements isn't the only factor that awakens in the visitor to any one of Atari's three California-modern plants a sense of the extraordinary. As Bushnell and Lipkin readily attest, Atari management and labor is not drawn from the same mold one might expect to find in at General Electric or in a Detroit car or, for that matter, a Chicago games factory. For one thing, key management personnel are no older than 35 or so and laborers are in their late teens through their mid-20's.

Atari, then, is a young company not only in terms of company age--it was founded in 1972--but also in terms of employe age.

"This is definitely the first company I've ever run; so we're making a lot of mistakes," Bushnell admits. "But we've got a young management that enjoys what its doing for the work itself, not some pie-in-the-sky financial rewards."

"Our whole concept was to start with people who didn't really have set ideas about the way they were going to do things," Gil Williams, vice president of manufacturing, piped in by way of explaining the youthfulness of the company's assembly workers as well.

"I went outside the industry," Marketing VP Lipkin said of his hiring of a sales manager, "because I wanted someone experienced in working for a large corporation, but someone who we could train our way."

Apparently, Bushnell believes this philosophy keeps employes happy and helps the company grow properly. This unusual view is back up in practice by providing stock options for all employes who are considered key employes, the video game inventor adds. "Even the employes on the line have an employe investment program (known as ESOP). Someday this company will be owned by the employes."

In the next 10-15 years, he goes on, "this company will produce between 20 and 30 millionaires. They'll make it themselves and they will all have fun doing it." Thinking about this, Bushnell expounds on the philosophy behind Atari's creativity in the electronic games field.

"After you make a million dollars, unless you get a taste for the exotic, you really can't spend more than a million. You can, but you'd end up doing a lot of dumb things. You can buy the nicest house you'd want without living in a hotel and you can buy the nicest car you'd like to drive and the nicest boat you'd like to saidl, and still have enough money to live off the interest very comfortably," he remarks.

"The only thing more millions

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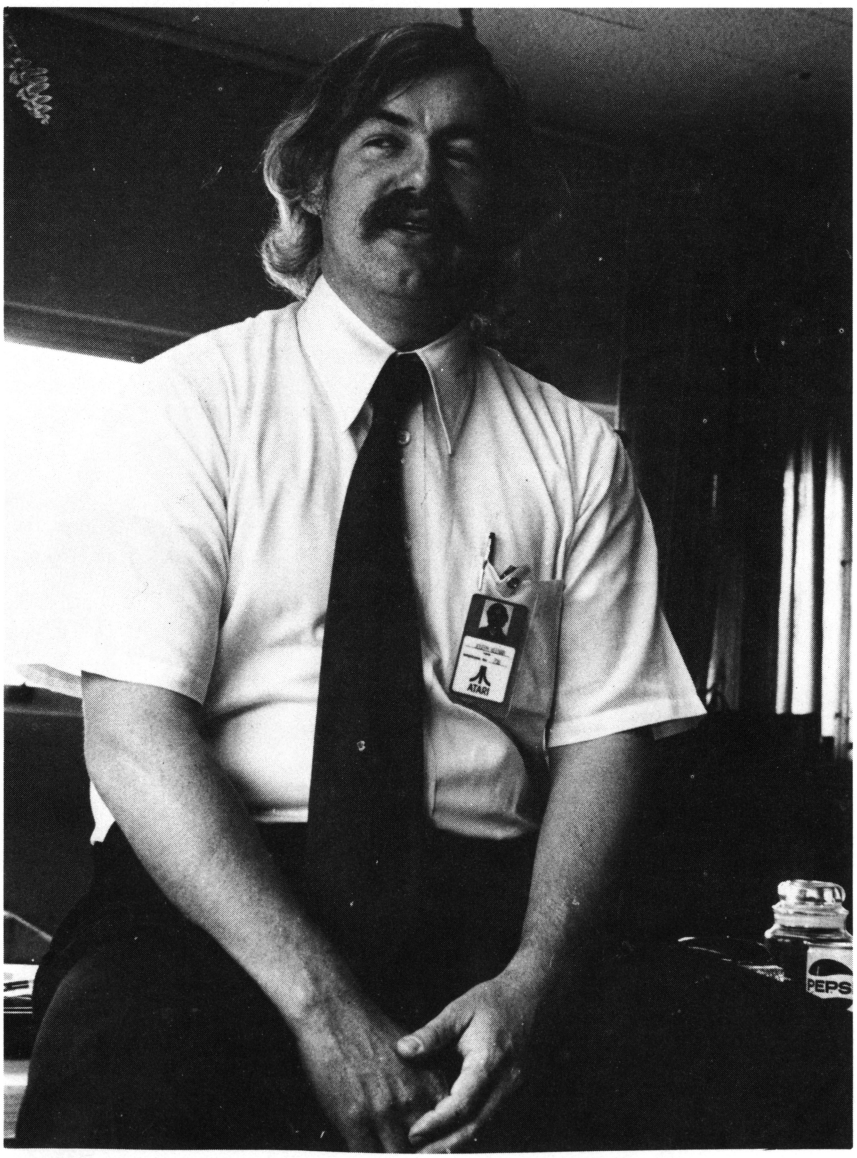
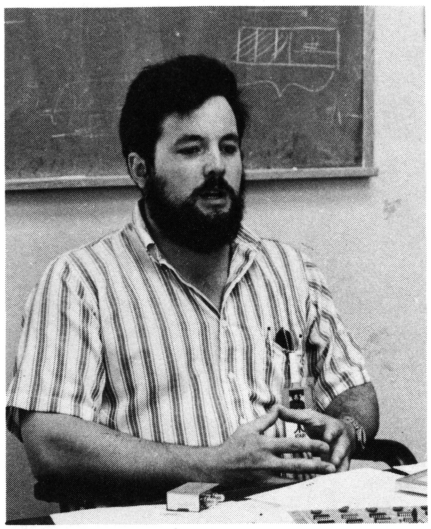


SMILING ABOUT Atari's recent successes, President Joe Keenan talks about the future.



Al Alcorn
VP of Research and Development

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give you is what I think of as 'play money'--money to play with to enjoy your business. When you look at it that way, it becomes easier to share and that's one reason we all view this company as a vehicle by which we can be creative," Bushnell remarks

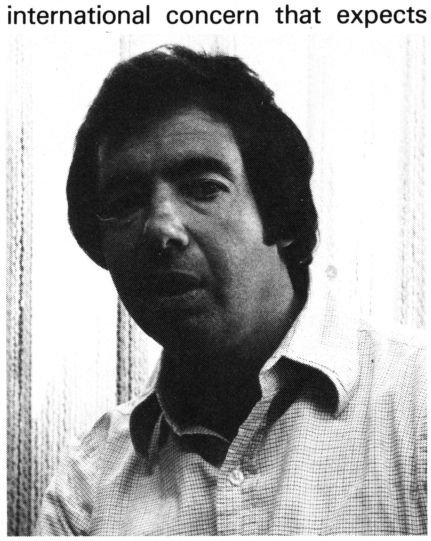
And creative Bushnell is. "If it was up to me I'd grow us to death, like I almost did a year and a half ago," he readily admits. "Company growth comes from me and company stability from Joe." Keenan agrees with this self assessment and notes that Bushnell is the visionary of the company while he oversees the day-to-day operations and keeps the creative energies from running amok.

Whether Bushnell's inventiveness has ever actually run away with him, his company bears the mark of his unceasing desire to pioneer, to forge new frontiers of game concepts and new avenues of business activity.

Certainly, Atari-Kee is one of the few companies, if not the only one, that has situations where two distributors in one area handle its products. Lipkin doesn't feel this has hurt the company. In fact, he thinks it has helped the firm's position. "You have a lot of guys," he explains, "who buy from only one distributor. Also, we don't want to be put in a situation where our only distributor in an area hurts the product line by sitting on it because he doesn't like it personally."

Sometimes having two distributors in the same area handling the same product results in a mini-price war, Lipkin admits, but "they don't have to resort to that if they would just have integrity in their pricing. They've got to realize that their profits don't come from undercutting competitors in prices, but from providing better service to their accounts."

The company, Lipkin says, has a present total of 100 distributors worldwide. There are 79 domestic distributors and three in Canada. There is a manufacturing facility in France and assembly centers in Japan, Brazil and five other locations, in addition to the Los Gatos, Santa Clara and Sunnyvale plants here in the U.S. From the initial $5,000 capital Bushnell started the company with, it has grown to an international concern that expects



Ron Gordon
Dir. of Int'l. Operations

to do close to $30 million in volume this year, he said. From Bushnell and a few others in his garage, the domestic operation now employs some 371 persons.

Internationally, Ron Gordon, Atari's directgor of international operations, feels the company is far far ahead of any competition. "Other than some Wheels (Midway) that were sold this past year," he says, "we virtually dominate the new video games market overseas. I would say we account for 75 per cent of all games sold."

Of course, Atari was hindered overseas two years ago when the proliferation of similar paddle games hurt operators worldwide, Gordon says. "Europe was hurt more than the United States," he explains. "For one thing, the game cost more overseas--you have to add duty and freight, plus the importer's costs. It took us a long time to regain all the operators who were hurt by the paddle games because you must remember that in many countries, the coin of usage is worth less than our quarter. In addition to that, they have steadier customers; it's not a transient populatin."

This fact led European paddle game players to tire more quickly of the game and the proliferatin of the games left European operators with no place to rotate equipment. "So they were quite reticent to get back into our Trak 10, but once they did, without the market being flooded and with the earnings of the game followed by Tank, the confidence came back rather strongly."

Confidence is the prevailing atmosphere at the Atari home base, now that Tank and Indy 800 have proven to be such successes and now that game concepts never before practical enough to try are within reach. Bushnell and his unique organization are confident, but not unaware of the pitfalls of overconfidence as evidenced by Bushnell's comment that he considers any competitor a potential threat.

"Igear my marketing and factory strategy accordingly," he says. "I know it sounds predatory, but it's a situation where you don't know where strength is going to come from. For example, Atari was discounted by Chicago until we were strong enough to attack them on their own ground. Now we've proven ourselves."

So Atari forges onward into the future with new game concepts and

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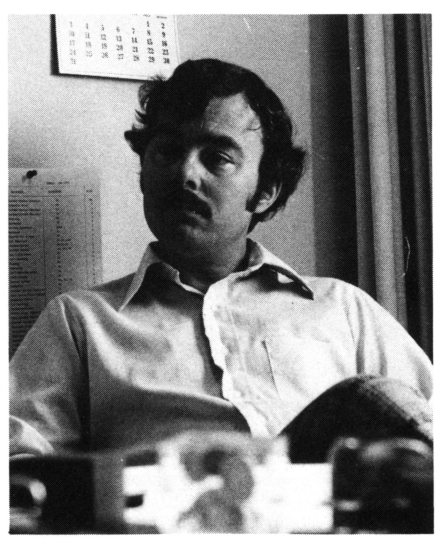


Gil Williams
VP of Manufacturing

(*Continued from page 33*)

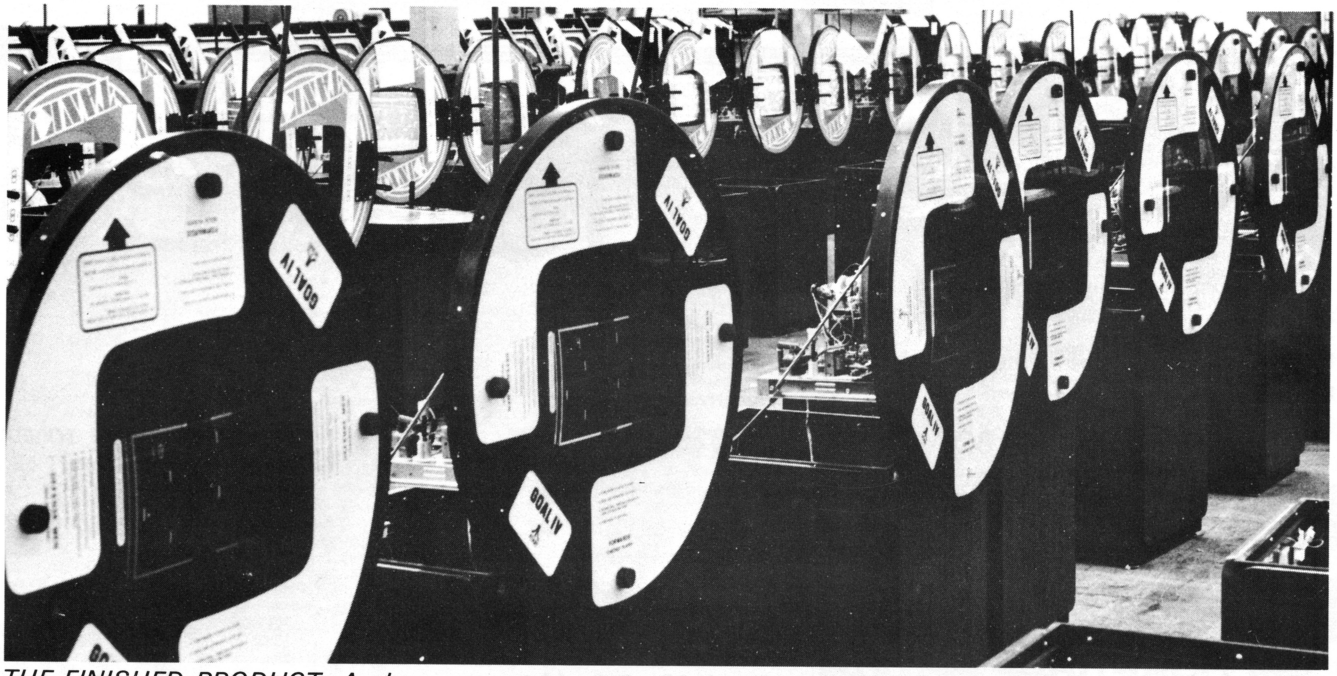
company $20,000 a year ago, sorts good IC's from bad ones. "Although we buy pre-tested IC's, which the manufacturers tell us are 98 per cent good, we want 100 per cent good before they even go into the circuit boards," Williams notes.

After the boards and IC's have been checked, they're sent down the assembly lines where workers, mostly women, install or "stuff" the components into the boards. The first portion of the line stuffs all of the integrated circuits, Williams explains, with each worker putting in a certain pattern of integrated circuits. "Once all the IC's are stuffed, the board undergoes a quick quality check and goes to the other sice of the assembly table where the discrete (or single function) components are stuffed," he goes on. At the end of that line, the boards undergo another quality check to make sure everything

[*See next page*]

THREE MEMBERS of the circuit board checking department just returned from lunch get busy examining the units.

AN ATARI TEST technician notes deficiencies in a circuit board he is testing for a game. Several technicians sit around a table with various test instruments and Headphones, which keep the test sound levels personalized.



THE FINISHED PRODUCT--A phalanx of Tank-in-a-Cocktail Tables stand ready for final adjustments and packaging before shipping at the Santa Clara plant.

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appears to be in its proper place in the proper manner.

"Once we're happy with the way a board looks," Williams continues, "we put it through our wave solder machine, which is one of the most modern machines in the industry today." The wave solder machine has a conveyor contraption to which the boards are attached. As the board goes into the machine it is pre-heated and a flex is put on it. At the center of the machine, a continuous flow of molten solder creates a "wave" which the board rides like a surfboard, putting only a desired amount of solder onto the right connections of the board. After passing over the wave, the board is cleaned and degreased by the wave solder machine. "Now," Williams remarks, "it should need a minimum of trime and touch-up before it goes to the test department." Before the solder machine was updated, he notes, there was anywhere from 30 to 45 minutes of touch-up left when the board was finished. Now the touch-up process is down to one and a half to two minutes.

After another short quality control check, Ithe completed board goes to the test department where any test technician will put it on his test station and look at it. If the tech gets a picture, which happens in about 10 to 15 per cent of the cases, Williams says, the board is good. If the board doesn't work, the tech will try to find out what's wrong with it and fix it. As soon as the tech is happy that the board is playable, it goes into one of several ovens where it bakes at 140 degrees Centigrade.

"After it has roasted for a full day, the tech pulls it out and puts it back on his test equipment. It's not necessarily the same tech who put it in, either. That way we prevent the same person from following a board all the way out." If something has died on the board, the tech fixes it and puts it back in the oven for 12 hours. The board comes out again and goes through another check. If the board is still good, it goes over to the Santa Clara assembly center and sits in a stockrfoom for a day or two and then gets put into the machine. It will sit in the machine for two days, running, Williams goes on to say, before it finally gets the quality check that determines whether it's okay to ship.

If something fails during those two-three days, the board is sent back to the Los Gatos plant to go through another test, burn, test cycle. "By doing this cycle," Williams says, "we've cut down our failure rate of games going out the door from 10-15 per cent infant mortality (failure within the first 24 hours of on-location operation) to three or four per cent." And a large part of that failure today is from freight damage he adds.

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5	6	**DANCE WITH ME** ORLEANS/Asylum 45261	12
6	8	**ROCKY** AUSTIN ROBERTS/Private Stock 020	11
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8	2	**RHINESTONE COWBOY** GLEN CAMPBELL/Capitol 4095	19
9	12	**AIN'T NO WAY TO TREAT A LADY** HELEN REDDY/Capitol 4128	9
10	3	**WASTED DAYS AND WASTED NIGHTS** FREDDY FENDER/ABC Dot DOA 17558	15
11	14	**THEY JUST CAN'T STOP IT (THE GAMES PEOPLE PLAY)** SPINNERS/Atlantic 1284	8
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16	13	**(I BELIEVE) THERE'S NOTHING STRONGER THAN OUR LOVE** PAUL ANKA with ODIA COATES/United Artists XW685 Y	11
17	21	**BRAZIL** RITCHIE FAMILY/20th Century 2218	7
18	24	**BAD BLOOD** NEIL SEDAKA/Rocket 40460 (MCA)	4
19	22	**MIRACLES** JEFFERSON STARSHIP/Grunt FB 10367 (RCA)	7
20	17	**FEEL LIKE MAKIN' LOVE** BAD COMPANY/Swan Song 70106 (Atlantic)	14
21	27	**LYIN' EYES** EAGLES/Asylum E 45279	4
22	26	**DO IT ANY WAY YOU WANNA** PEOPLES CHOICE/TSOP ZS8 4759 (Col)	8
23	23	**DAISY JANE** AMERICA/Warner Bros. 8118	11
24	28	**WHO LOVES YOU** FOUR SEASONS/Warner Bros.-Curb 8122	7
25	18	**THAT'S THE WAY OF THE WORLD** EARTH, WIND & FIRE/Columbia 3 10172	13
26	32	**WHAT A DIFFERENCE A DAY MADE** ESTHER PHILLIPS/Kudu 925F (Motown)	8
27	19	**AT SEVENTEEN** JANIS IAN/Columbia 3 10154	15
28	41	**LADY BLUE** LEON RUSSELL/Shelter 40378 (MCA)	9
29	31	**MAIN TITLE (THEME FROM JAWS)** JAWS SOUNDTRACK/MCA 40439	8
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31	36	**CAROLINA IN THE PINES** MICHAEL MURPHEY/Epic 8 50121	7
32	20	**FALLIN' IN LOVE** HAMILTON, JOE FRANK & REYNOLDS/Playboy 6024	16
33	25	**FIGHT THE POWER—PART I** ISLEY BROTHERS/T-Neck ZS8 2256 (Col)	14
34	47	**S O S** ABBA/Atlantic 4265	8
35	38	**YOUR LOVE** GRAHAM CENTRAL STATION/Warner Bros. 8105	8
36	69	**LOW RIDER** WAR/United Artists XW706 Y	2
37	45	**HEAT WAVE/LOVE IS A ROSE** LINDA RONSTADT/Asylum 282	5
38	43	**DREAMING A DREAM** CROWN HEIGHTS AFFAIR/Delite 1570 (PIP)	10
39	53	**BORN TO RUN** BRUCE	
40	29	**COULD IT BE MAGIC** B	
41	33	**SOLITAIRE** CARPENTERS	
42	52	**I ONLY HAVE EYES FO**	
43	54	**BLUE EYES CRYING IN**	
44	59	**THERE GOES ANOTHER**	
45	30	**GONE AT LAST** PAUL JESSY D	
46	46	**I LOVE MAKIN' LOVE**	
47	50	**TO EACH HIS OWN** FA	
48	49	**I GET HIGH ON YOU**	
49	35	**THE PROUD ONE** OSM	
50	58	**SOMETHING BETTER T**	
51	68	**THE WAY I WANT TO**	
52	60	**ROCKIN' ALL OVER TH**	
53	39	**JIVE TALKIN'** BEE GE	
54	57	**7-6-5-4-3-2-1** GARY T	
55	56	**ONLY YOU CAN** FOX/	
56	70	**YOU** GEORGE HARRIS	
57	65	**I WANT'A DO SOMET** LE	
58	51	**YOU'RE ALL I NEED TO**	
59	34	**HOW SWEET IT IS** JA	
60	63	**A FRIEND OF MINE IS**	
61	66	**EIGHTEEN WITH A BU**	
62	64	**IF I EVER LOSE THIS**	
63	40	**THIRD RATE ROMANC**	
64	48	**KATMANDU** BOB SEG	
65	44	**BLACK SUPERMAN—M** THE K	
66	78	**JUST TOO MANY PEOP**	
67	72	**I GOT STONED AND**	
68	77	**EVERYDAY I HAVE TO**	

TOP 100

			WKS. ON CHART
		SPRINGSTEEN/Columbia 3 10209	4
		ARRY MANILOW/Arista 0126	15
		/A&M 1721	10
		R YOU ART GARFUNKEL/Columbia 3 10190	7
		THE RAIN WILLIE NELSON/ Columbia 3 10176	6
		LOVE SONG OUTLAWS/Arista 0150	5
		IMON/PHOEBE SNOW & THE XON SINGERS/Columbia 3 10196	8
		O YOU EVIE SANDS/Haven 71013 (Capitol)	8
		TH, HOPE & CHARITY/RCA PB 10343	9
		LY STONE/Epic 8 10135	7
		ONDS/MGM 14791	11
		O DO OLIVIA NEWTON-JOHN/ MCA 40429	3
		OUCH YOU CAPTAIN & TENNILLE/ A&M 1725	3
		E WORLD JOHN FOGERTY/ Asylum 45274	5
		S/RSO 510 (Atlantic)	20
		OMS EMPIRE/PIP 6504	15
		ariola-American/GTO 7601 (Capitol)	6
		N/Apple 1884 (Capitol)	3
		ING FREAKY TO YOU N HAYWOOD/20th Century 2228	4
		GET BY TONY ORLANDO & DAWN/ Elektra 45275	5
		ES TAYLOR/Warner Bros. 8109	15
		OING BLIND JOHN DAWSON READ/ Chrysalis 2105 (WB)	4
		LET PETE WINGFIELD/Island 0261	5
		EAVEN AWB/Atlantic 3285	5
		AMAZING RHYTHM ACES/ABC 12078	16
		/Capitol 4116	9
		HAMMAD ALI JOHNNY WAKELIN & SHASA BAND/Pye 71012 (ATV)	23
		E MELISSA MANCHESTER/Arista 0146	3
		MISSED IT JIM STAFFORD/MGM 14819	3
		CRY SOME ARTHUR ALEXANDER/ Buddah 492	3

Now	Was		
69	—	**NIGHTS ON BROADWAY** BEE GEES RSO SO 515 (Atlantic)	1
70	80	**SKY HIGH** JIGSAW/Chelsea 3022	6
71	71	**IF I COULD ONLY WIN YOUR LOVE** EMMYLOU HARRIS/ Reprise 1332 (WB)	4
72	75	**MONEY** GLADYS KNIGHT & THE PIPS/Buddah 487	6
73	83	**THE AGONY AND THE ECSTASY** SMOKEY ROBINSON/ Tamla T 54251 F (Motown)	2
74	85	**SWEET STICKY THING** OHIO PLAYERS/Mercury 73713	2
75	55	**HELP ME RHONDA** JOHNNY RIVERS/Epic 8 50121	14
76	61	**HOPE THAT WE CAN BE TOGETHER SOON** SHARON PAIGE AND HAROLD MELVIN & THE BLUENOTES/ Phila. Intl. ZS8 3569 (Col)	15
77	62	**DREAM MERCHANT** NEW BIRTH/Buddah 470	13
78	42	**TUSH** ZZ TOP/London 5N 220	12
79	73	**LISTEN TO WHAT THE MAN SAID** WINGS/Capitol 4091	19
80	81	**GIVE IT WHAT YOU GOT/PEACE PIPE** B. T. EXPRESS/ Roadshow 7003 (Scepter)	5
81	—	**CHANGE WITH THE TIMES** VAN McCOY/Avco 4660	1
82	95	**KEEP ON TRYIN'** POCO/ABC 12126	2
83	87	**BRAND NEW LOVE AFFAIR** CHICAGO/Columbia 3 10200	3
84	89	**SUMMER OF '42** BIDDU ORCHESTRA/Epic 8 50139	4
85	—	**INDIAN LOVE CALL** RAY STEVENS/Barnaby 616 (Janus)	1
86	98	**THE OTHER WOMAN** VICKI LAWRENCE/Private Stock 036	2
87	93	**DEAR PRUDENCE** KATFISH/Big Tree BT 16045 (Atlantic)	3
88	90	**ROCKIN' & ROLLIN' IN THE STREETS OF HOLLYWOOD** BUDDY MILES/Casablanca 839	4
89	—	**DIAMONDS & RUST** JOAN BAEZ/A&M 1737	1
90	94	**MAMACITA** GRASS ROOTS/Haven 7015 (Capitol)	2
91	—	**EASY EVIL** TRAVIS WAMMACK/Capricorn 0242 (WB)	1
92	92	**YOU AIN'T NEVER BEEN LOVED** JESSI COLTER/Capitol 4087	3
93	74	**ALVIN STONE (BIRTH & DEATH OF A GANGSTER)** FANTASTIC FOUR/Westbound WT 5009 (20th Century)	12
94	—	**SO IN LOVE** CURTIS MAYFIELD/Curtom CMS 0105 (WB)	1
95	—	**OPERATOR** MANHATTAN TRANSFER/Atlantic 3292	1
96	97	**ARE YOU SURE HANK DID IT THIS WAY?** WAYLON JENNINGS/RCA PB 10379	3
97	100	**MUSIC IN MY BONES** JOE SIMON/Spring 159 (Polydor)	2
98	—	**MR. D.J. (5 FOR THE DJ)** ARETHA FRANKLIN/Atlantic 3289	1
99	67	**SOMEONE SAVED MY LIFE TONIGHT** ELTON JOHN/ MCA 40421	14
100	—	**WE'VE BEEN SINGIN' SONGS** BARON STEWART/ United Artists XW686 Y	1

Top 20 Country

Now Was

1 2 DAYDREAMS ABOUT NIGHT THINGS
Ronnie Milsap/RCA PB 10335

2 1 BLUE EYES CRYING IN THE RAIN
Willie Nelson/Columbia 3 10176

3 3 IF I COULD ONLY WIN YOUR LOVE
Emmylou Harris/Reprise RPS 1332

4 7 DON'T CRY JONI
Conway Twitty/MCA 40407

5 11 I HOPE YOU'RE FEELING ME
Charley Pride/RCA PB 10344

6 6 BANDY THE RODEO CLOWN
Moe Bandy/GRC 2070

7 4 THE FIRST TIME
Freddie Hart/Capitol 5099

8 8 YOU NEVER EVEN CALLED ME BY MY NAME
David Allen Coe/Columbia 3 10159

9 10 SAY FOREVER YOU'LL BE MINE
Porter Wagoner & Dolly Parton/RCA PB 10328

10 16 (TURN OUT THE LIGHTS) AND LOVE ME TONIGHT
Don Williams/ABC Dot DOA 17568

11 9 RHINESTONE COWBOY
Glen Campbell/Capitol 4095

12 13 HOME
Loretta Lynn/MCA 40438

13 17 ONE MONKEY DON'T STOP NO SHOW
Little David Wilkins/MCA 40427

14 15 HERE I AM IN DALLAS
Faron Young/Mercury 73692

15 19 I'M SORRY
John Denver/RCA PB 10353

16 25 SAN ANTONIO STROLL
Tanya Tucker/MCA 40444

17 27 ROCKY
Dickey Lee/RCA PB 10361

18 20 WHAT IN THE WORLD'S COME OVER YOU
Sonny James/Columbia 3 10184

19 22 HEART TO HEART
Roy Clark/ABC Cot DOA 17565

20 23 BRINGING IT BACK
Brenda Lee/MCA 40442

Music Programming

We offer some hu for enjoying yo

This article really has very little to do with music programming, but we didn't quite know where to stick it and we needed something to fill this hole in the magazine. So, here it is--an article about what to do when you have some spare time in Chicago.

As soon as you get off the plane, or as soon as possible thereafter, buy yourself a copy of *Chicago* magazine. Not only is it an excellent collection of finely written articles about various aspects of Chicago life, but it also contains restaurant, night club, theatre and live performance information, as well as information about the arts and television.

The magazine, published monthly, contains listings and brief comments about movies currently playing in the Windy City and about plays and operas being performed there.

The city also has several museums to visit, most of which are listed in *Chicago*. For example, there is the Jane Addam's Hull House, a national landmark, according to the magazine, which lies in the shadow of the University of Illinois at Chicago Circle. "Only two of the original cluster of 13 buildings remain," the magazine says, "but careful restoration exhibits and a yo staff provide a rea the Settlement and hood." It's free, make reservations.

Other museums magazine are the A at 1300 Lake Shore admission price, Institute of Chicag Adams. Other fr clude the Museum Industry, E. 57th a the Oriental Ins Breasted Hall, th Chicago, 1155 E. 5 Museum of Natur are more, but th general idea of exhibits you can interested.

Any kind of mus be yours in Chicag several classical m well as the Chi Orchestra and in concert artists. O pop and rock can various locations. of Chicago is lo Wacker. Several halls feature live ro pop concerts perio

ALPHABETICAL LISTING

A FRIEND OF MINE IS GOING BLIND Guy Fletcher (Big Secret, ASCAP) 60
AIN'T NO WAY TO TREAT A LADY Joe Wissert (Colgems, ASCAP) 9
ALVIN STONE (BIRTH & DEATH OF A GANGSTER) Al Kent (Bridgeport, BMI) 93
ARE YOU SURE HANK DID IT THIS WAY? Jack Clement & Waylon Jennings (Baron, BMI) 96
AT SEVENTEEN Brooks Arthur (Mine/April, ASCAP) 27
BAD BLOOD Neil Sedaka & Robert Appere (Don Kirshner, BMI/Kirshner Songs, ASCAP) 18
BALLROOM BLITZ Phil Wainman (Chinnichap/RAK, BMI) 15
BLACK SUPERMAN-MUHAMMED ALI Robin Blanchflower (Drummer Boy, BMI) 65
7-6-5-4-3-2-1 (BLOW YOUR WHISTLE) Rick Bleiweiss & Bill Stahl (Cookaway, ASCAP) 54
BORN TO RUN Bruce Springsteen & Mike Appel (Laurel Canyon, ASCAP) 39
BLUE EYES CRYING IN THE RAIN Willie Nelson (Milene, BMI) 43
BRAND NEW LOVE AFFAIR James William Guercio (Make Me Smile/Big Elk, ASCAP) 83
BRAZIL J. Morali (Peer International, BMI) 17
CAROLINA IN THE PINES Bob Johnston (Mystery, BMI) 31
CHANGE WITH THE TIMES Hugo & Luigi (Van McCoy/Warner-Tamerlane, BMI).... 81
COULD IT BE MAGIC Barry Manilow & Ron Dante (Kamikazi/Angeldust, BMI).... 40
DAISY JANE George Martin (WB, ASCAP) 23
DANCE WITH ME Charles Plotkin (Hall/Mojohanna, BMI) 5
DEAR PRUDENCE Bob Herne (Maclen, BMI) 87
DIAMONDS & RUST David Kershenbaum & Joan Baez: JCB Prod./Bernard Gelb (Chandos, ASCAP) 89
DO IT ANY WAY YOU WANNA Leon Huff (Mighty Three, BMI) 22
DREAM MERCHANT James Baker & Melvin Wilson (Saturday, BMI) 77
DREAMING A DREAM Nerangis-Britton (Delightful, BMI) 38
EASY EVIL Rick Hall/Fame Prod. (Zapata/E.H. Morris, ASCAP) 91
EIGHTEEN WITH A BULLET Pete Wingfield & Barry Hammond (Ackee & Uncle Doris, ASCAP) 61
EVERYDAY I HAVE TO CRY SOME Al Cartee & George Soule (Combine, BMI) 68
FALLIN' IN LOVE Jim Price (Spitfire, BMI) 32
FAME David Bowie & Harry Maslin (Main Man/John Lennon/Ceilidh, ASCAP) 1
FEEL LIKE MAKIN' LOVE Bad Company (Badco, ASCAP) 20
FEELINGS M. Albert (Fermata Intl., ASCAP) 13
FIGHT THE POWER—PART I E., M., R., O. & R, Isley & C Jasper (Bovina, ASCAP) 33
GET DOWN TONIGHT H. W. Casey, R. Finch (Sherlyn, BMI) 14
GIVE IT WHAT YOU GOT Jeff Lane (Triple O/Jeff-Mar, BMI) 80
GONE AT LAST Paul Simon & Phil Ramone (Paul Simon, BMI) 45
HEAT WAVE Peter Asher (Jobete, ASCAP) 37
HELP ME RHONDA Johnny Rivers (Irving, BMI) 75
HOPE THAT WE CAN BE TOGETHER SOON Gamble-Huff (Mighty Three, BMI) 76
HOW LONG (BETCHA GOT A CHICK ON THE SIDE David Rubinson & Friends (Pool Grounds, BMI/Ebbets Field, ASCAP) 7
HOW SWEET IT IS (TO BE LOVED BY YOU) Lenny Waronker & Russ Titelman (Stone Agate, BMI) 59
(I BELIEVE) THERE'S NOTHING STRONGER THAN OUR LOVE Rick Hall (Spanka, BMI) 16
I GET HIGH ON YOU Sly Stone (Stone Flower, BMI) 48
I GOT STONED AND I MISSED IT Phil Gernhard & Lobo (Evil Eye, BMI) 67
I LOVE MAKIN' LOVE TO YOU Lambert & Potter (Big Cigar/Blen/Common Good/Pocket Full/Every Little/Touch of Gold/American Dream, BMI/ASCAP 46
I ONLY HAVE EYES FOR YOU Richard Perry (WB, ASCAP) 42
I'M SORRY Milt Okun (Cherry Lane ASCAP) 2
IF I COULD ONLY WIN YOUR LOVE Brian Ahern (Acuff-Rose, BMI) 71
IF I EVER LOSE THIS HEAVEN Arif Mardin (Almo Jobete, ASCAP) 62
INDIAN LOVE CALL Ray Stevens/Ahab Prod. (WB, ASCAP) 85
IT ONLY TAKES A MINUTE Dennis Lambert & Brian Potter (ABC Dunhill/One of a Kind, BMI)..... 12
I WANT'A DO SOMETHING FREAKY TO YOU Leon Haywood (Jim-Eld. BMI) 57

Charts courte

rried suggestions urself in Chicago

, well prepared ung, imaginative sense of life at in the neighbor- ut groups must

listed by the dler Planetarium It has a nominal s does the Art o at Michigan at e museums in- of Science and d S. Lake Shore; itute Museum, e University of th; and the Field l History. There at gives you a the variety of see if you're

ic you enjoy can , too. There are usic groups, as ago Symphony ividual classical pera, folk, jazz, all be found at The Lyric Opera ated at 20 N. ifferent concert k, jazz, folk and dically and many

nightclubs feature live performances by locally and nationally known performers.

A sampling of some of the clubs listed in *Chicago* include The Arc, for a sing-along piano bar and dancing; Amazingrace, for folk music; Athens, for Grecian food and entertainment; The Quiet Night, for live rock, folk, country, blues or jazz; and Alfie's, for those who like to disco.

There are many professional theatre groups, as well as college and community ventures. Each issue of *Chicago* lists the entries for the coming month.

Restaurants in Chicago are a *gourmand's* and a gourmet's delight. *Chicago* lists several pages of them, each with a brief critique of the food and atmosphere.

There's probably lots more things to do in Chicago when you're not busy at the MOA show, but we're confident you can find those yourself.

See you in Chicago.

esy of RECORD WORLD

JIVE TALKIN Arif Mardin (Casserole, BMI) 53
JUST TOO MANY PEOPLE Vini Poncia/ Richard Perry (Braintree/Roumanian Pickleworks, BMI) 66
KATMANDU Bob Seger & Muscle Shoals Rhythm Section (Gear, ASCAP) 64
KEEP ON TRYIN Poco & Mark Harmon (Fool's Gold, ASCAP) 82
LADY BLUE Denny Cordell & Leon Russell (Skyhill, BMI) 28
LISTEN TO WHAT THE MAN SAID Paul McCartney (McCartney/ATV, BMI) 79
LOVE IS A ROSE Peter Asher (Silver Fiddle, BMI) 37
LOW RIDER Jerry Goldstein w. Lonnie Jordon & Howard Scott/Far Out Prod. (Far Out, ASCAP) 36
LYIN EYES Bill Szymczyk (Benchmark/ Kicking Bear, ASCAP) 21
MAIN TITLE (THEME FROM JAWS) prod. not listed (Duchess, BMI) 29
MAMACITA Dennis Lambert & Brian Potter & Rob Grill (Screen Gems Columbia & Summerhill Songs, BMI) 90
MIRACLES Jefferson Starship & Larry Cox (Diamondback, BMI) 19
MR. D.J. (5 FOR THE DJ) Jerry Wexler & Aretha Franklin (Pundit, BMI) 98
MR. JAWS Bill Ramal & Dickie Goodman (Unichappell, BMI) 3
MONEY Eugene McDaniels (Skyforest, BMI) 72
MUSIC IN MY BONES Raeford Gerald & Joe Simon (Gaucho/Belinda, BMI) 97
NIGHTS ON BROADWAY Arif Mardin (Casserole, BMI) 69
ONLY YOU CAN Kenny Young (Gurusama/Chrysalis, ASCAP) 55
OPERATION Tim Hauser & Ahmet Ertegun (Conrad, BMI) 95
PEACE PIPE Jeff Lane (Triple O/Jeff-Mar, BMI) 80
RHINESTONE COWBOY Dennis Lambert & Brian Potter (20th Century/House of Weiss, ASCAP) 8
ROCKIN' & ROLLIN' IN THE STREETS OF HOLLYWOOD Buddy Miles (Miles Ahead, ASCAP) 88
ROCKIN' ALL OVER THE WORLD John Fogerty (Greasy King, ASCAP) 52
ROCKY Bob Montgomery (Strawberry Hill, ASCAP) 6
RUN JOEY RUN Paul Vance (Music of the Times, ASCAP) 4
SKY HIGH Chas. Peate (Duchess, BMI) 70
SO IN LOVE Curtis Mayfield (Mayfield, BMI) 94
SOLITAIRE Richard Carpenter w. Karen Carpenter (Don Kirshner, BMI/Kirshner ASCAP) 41
SOMEONE SAVED MY LIFE TONIGHT Gus Dudgeon (Big Pig/Leeds, ASCAP) 99
SOMETHING BETTER TO DO John Farrar (ATV-BMI) 50
SOS B. Uuvaeus & B. Anderson (Countless, BMI) 34
SUMMER OF '42 Biddu (Warner Bros., ASCAP) 84
SWEET STICKY THING Ohio Players (Ohio Players/Unichappell, BMI) 74
THAT'S THE WAY OF THE WORLD Maurice White/Charles Stepney (Saggiflame, BMI) 25
THE AGONY AND THE ECSTACY Smokey Robinson (Bertram, ASCAP) 73
THE OTHER WOMAN Snuff Garrett (Welbeck, ASCAP, Sequel, BMI) 86
THE PROUD ONE Mike Curb (Seasons Four/Saturday, BMI) 49
THE WAY I WANT TO TOUCH YOU Morgan Cavett (Moonlight and Magnolias, BMI) 51
THERE GOES ANOTHER LOVE SONG Paul Rothchild (Hustler's, BMI) 44
THEY JUST CAN'T STOP IT (The Games People Play) Thom Bell (Mighty Three, BMI) 11
THIRD RATE ROMANCE Barry Burton (Fourth Floor, ASCAP) 63
THIS WILL BE Chuck Jackson & Marvin Yancy (Jay's Ent./Chappell, ASCAP) 30
TO EACH HIS OWN Van McCoy (Van McCoy/Warner-Tamerlane, BMI) 47
TUSH Bill Ham (Hamstein, BMI) 78
WASTED DAYS AND WASTED NIGHTS Huey P. Meaux (Travis, BMI) 10
WE'VE BEEN SINGIN' SONGS Dallas Smith (Eyes Havit/Uni-Chappell/ Unart, BMI) 100
WHAT A DIFFERENCE A DAY MADE Creed Taylor (E. B. Marks, BMI/Stanley Adams, ASCAP) 26
WHO LOVES YOU Bob Gaudio (Seasons/ Jobete, ASCAP) 24
YOU George Harrison (Ganga Pub. B.V., BMI) 56
YOU AIN'T NEVER BEEN LOVED (LIKE I'M GONNA LOVE YOU) Ken Mansfield & Waylon Jennings/Hometown Prod. (Baron, BMI) 92
YOU'RE ALL I NEED TO GET BY Dave Appell & Hank Medress (Jobete, ASCAP) 58
YOUR LOVE Larry Graham (Nineteen Eighty Foe, BMI) 35

Top 20 Soul

Now Was

1 1 DO IT ANY WAY YOU WANNA
Peoples Choice/TSOP ZS8 4769I (Col)
2 2 HOW LONG (BETCHA GOT A CHICK ON THE SIDE)
Pointer sisters/ABC Blue Thumb BTA 265
3 4 THIS WILL BE
Natalie Cole/Capitol 4099
4 6 IT ONLY TAKES A MINUTE
Tavares/Capitol 4111
5 8 THEY JUST CAN'T STOP IT (THE GAMES PEOPLE PLAY)
Spinners/Spinners - Atlantic 3284
6 3 GET DOWN TONIGHT
KC & The Sunshine Band/TK 1009
7 5 YOUR LOVE
Graham Central Station/Warner Bros. WBS 8105
8 7 YOU MAKE ME FEEL LIKE A WOMAN
Jackie Moore/Kayvette TK
9 19 TO EACH HIS OWN
Faith, Hope & Charity/RCA PB 10343
10 13 BRAZIL
Richie Family/20th Century 2218
11 14 MONEY
Gladys Knight & The Pips/Buddah 478
12 22 MUSIC IN MY BONES
Joe Simon/Spring 159 (Polydor)
13 16 EIGHTEEN WITH A BULLET
Pete Wingfield/Island 026
14 17 GIVE IT WHAT YOU GOT/PEACE PIPE
B.T. Express/Roadshow 7003 (Scepter)
15 20 WHAT A DIFFERENCE A DAY MADE
Esther Phillips/Kudu 925 (Motown)
16 10 FIGHT THE POWER-PART ONE
Isley Bros./T-Neck ZS8 3356
17 18 OOLA LA
Betty Wright/Alston 3715 (TK)
18 9 DREAM MERCHANT
New Birth/Buddah 470
19 11 GLASSHOUSE
Gordy G714F (Mowtown)
20 24 I GET HIGH ON YOU
Sly Stone/Epic 8 10135

Tomorrow comes tod

By Ralph C. Lally II

Editor and Publisher

The coin-operated music and amusement industry entered the Space Age several years ago. That entry caused an upheaval that continues to affect our daily business lives and thinking, but it is only a beginning.

Our industry is still an infant in the application of space technology, but I don't think it will be an infant for long, especially in view of the rapidity with which so many government technicians grow tired of developing more efficient methods of killing people and turn their talents toward developing better ways of relaxing and having fun.

More activity and growth and improvement has taken place within this industry in the past three or four years than occurred in the past 20, but the next decade in the coin amusement field should hold even more astounding changes. As leisure time increases and more people search for inexpensive and personal means of entertainment, operators in this industry will be forced to create new techniques to deal with new situations brought on by increasingly newer and stranger technologies.

Dont be taken aback. After all, it was technology spawned by the Defense Department and NASA that brought about the boom in the games market we so recently enjoyed. The introduction of video games employing solid-state and

lay for successful ops

digital electronics was probably the most significant and dramatic change to occur within the industry in the past decade. And look at the "future shock" it caused and is still causing among operators. Consider, also, the new techniques and concepts that had to be created for those operators to survive.

Looking back, many operators were outraged at first over the prices the early video games sold for. After taking one look inside their new $1,100 video game, they were shocked to find a virtually empty cabinet. All they saw was a $95 black-and-white tv monitor, a couple of transformers, a slug rejector-cash box, a few wires and a strange fiber board of plastic, wires and solder--the logic board, the "brain" of the new game. Aside from the shock of the price, the average operator's first reaction was:'"how am I going to fix this thing when it breaks?" The resistance to price and change were major obstacles the first video games had to overcome. But operators soon learned the prices were high because the engineering and research costs had to be covered.

Most could understand the business logic behind that and took a chance on the new contraptions. For many, it paid off. As it paid off for the first few and public acceptance multiplied like laboratory mice, more and more operators grabbed at the new video games, oblivious to price and technology.

Unfortunately, too many operators and distributors were also oblivious to the laws of the marketplace. Misled by the sudden success of the novel games, they proceeded to over-buy and saturate the entire market with games that were all too similar in appearance and performance. Finally, rotation of equipment became impossible because every location had the same game and the marvelous grosses of over $200 a week dwindled to peanuts.

To the credit of the industry, however, the saturation and imitation problems were overcome through the realization of manufacturer, distributor and operator alike thatthe joyous adaptation of space technology to American fun and games could soon end in disaster if certain intelligent steps were not taken soon. With an eye toward planned production, increased innovation and continued good profits, the entire industry almost simultaneously re-examined its direction and today video games continue to be excitingly novel and consistent money earners.

If all segments of the industry keep the lessons learned from the introduction of the first paddle games in mind, future technological and business developments should astound, but not destroy or even hinder. Video games and other applications of computer technology to the amusement field will be a vital part of this industry's future, even though some operators are still frustrated over the technological aspect of video games.

The future in that area is just as bright as the overall industry's because we are beginning to see a greater interest in putting technical know-how into the operators' hands. Manufacturers and service agencies like Kurz-Kasch's Center for Technical Development are giving more frequent technical seminars, resulting in growing operator confidence when faced with servicing their new computer-run games.

In addition to manufacturer-and-distributor-provided service programs,the operator's future also holds the growth of privately owned service companies. Such businesses, devoted strictly to servicing the games of arcade owners and other operators, will probably sprout up in every major city in the country. Several already exist in such places as Illinois, California, Louisiana, Pennsylvania and New Jersey. The future service organizations will have specialists in the new technologies as well as electro-mechanical servicemen and will probably provide same-day service on repair jobs. The need is there and some are already beginning to fill it.

If the service requirements are filled, manufacturers will gain the confidence in their customers they need in order to begin applying increasingly advanced technology, creating in turn new avenues of expansion for the operator, who, armed with solid-state abilities himself or in touch with a competent service agency, will no longer fear the not-too-distant day when the stable pinball market will be entirely solid-state and feature play features state and feature play features as yet unthought of.

As more innovative and technologically advanced games are created and as more operators master their maintenance and marketing, more of the population will want to play games. The two per-cent figure estimated by Atari's Nolan Bushnell may soon become four, then six. Game centers and new profit-making uses for games and phonographs will arise as Americans become more aware of the innocent leisure and pleasure coin-op games provide.

We can already see the effects national exposure has had upon the industry. "Tommy,"the major motion picture about a world pinball champion, has brought pinball players out of the closet. More and more people are learning that pinball

(Continued on page 44)

(*Continued from page 41*)

is as natural a way to relax and wile away leisure time as watching television. Besides, pinball is probably more educational and at least it requires the use of some seldom-used muscles.

Marketing and promotional techniques for games will improve and spread the happy message of coin-op amusements throughout the country. Trickles of such large-scale promotions can be cited today--Bally's national tie-in with the "Tommy" movie, which made the Wizard one of the most successful flippers ever, and Tournament Soccer's Quarter Million Dollar Tour, which brought 1,000 enthusiasts together for the $1000,000 prize list.

In the forseeable future, we may have national table soccer, pinball and, quite possible, video game tournaments. The possibilities for successful major promotions of the coin-op industry and specific coin-op amusements are limited only by the imaginations of the promoters and the imaginations of those who invent our games.

Although I've concentrated on the future of games, do not think I've discarded the music industry, as some have. The jukebox can regain its prominence, Ibelieve, if a machine that allows operators album programming or some sort of tape programming is develolped. Phonograph manufacturers may be working on these concepts now and I hope they are successful. Such equipment could turn the growing tide of locations who become enamored of sound systems that would do recording studios proud and cost as much as they look like they do.

The future for all segments of our industry does look promising, but factors like location-owned equipment, lazy operators, unfavorable legislation, bad commission arrangements, excessive borrowing and a lack of cooperation on mutual problems could hurt the future I am confident can be ours.

Because of the ease with which it happens, location-owned equipment could threaten the very existence of industry operators. Because most location owners don't know how to properly maintain amusement devices or how to upgrade their equipment, the effect of location ownership on a large scale would be a ruined amusement industry.

Of course, the lazy operator is responsible for letting the location owner believe he can do it without the operator. Operators may think it's the distributor's fault for selling the location owner the game in the first piace, but more often than not, the location owner goes shopping for his own pieces because he's dissatisfied with the service he's been getting and because he believes he can do as good a job and make 100 per cent of the profit. The lazy operator who refuses to maintain his equipment or upgrade it backs his distributor into a corner when the location owner comes seeking his own machines because the distributor knows the feds will chew him up if he's caught refusing to sell to someone who wants to buy. I know of an investigation going on now, trying to put a distributor behind bars for supposed violation of the anti-trust laws.

Sadly, such incidents can be avoided by operators who do a proper job of selling themselves, convincing location owners that today's operator is a professional man who renders a total service--the supply, maintenance and proper selection of coin-operated amusements for a particular location. That is the key to the future of the small operator in a world in which small operators are being gobbled up by larger ones. Survival of the fittest is the law and the fittest is the operator who recognizes his responsibility to his locations, himself and his industry, thereby increasing his chances of profitable survival.

The future of your own route can be enhanced by emphasizing management and service, by setting realistic business goals, by allowing time for those goals to be reached and by evaluating the reasons for success or failure in attaining those goals. Do something about your profitability. You can, you know. Rearrange poor commission setups. Recognize your route's weaknesses and strengthen it. Stress service and strengthen your stance among your competitors.

Today's operator who wants to be tomorrow's operator can no longer survive on milked memories of yesteryear and yesterday's methods. Only professionals dedicated to sound business principles and aware of the changes occurring in their industry and society will survive.

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TECHNICAL TOPICS

By PERRY E. MILLER

I am often asked, "Do IC's and transistors wear out?"

No. They do not.

There are no moving parts inside integrated circuits o transistors to fail. Theoretically, then, IC's and transistors should last forever. But, they don't. There are two reasons for this--internal failures and outside influences. Internal failures are caused by manufacturing defects and little can be done about this problem. Internal failures will usually show up in the first month of operation, but the second cause, "outside influences," can be prevented.

"Outside influences" are problems such as coins falling on the logic PC board, shorts in the connector, broken wires, etc. For example, beer is a corrosive liquid and when poured over an electronic assembly will cause electronic circuits to malfunction and produce poor electrical connections between the printed circuit board and the connector. Beer will even remove the tin plating of the printed circuit wires. When beer is poured on an electronic assembly, the electronic assembly should be cleaned as soon as possible.

Coca-Cola or similar products leave a gummy residue in the sockets that causes poor electrical connections. Some type of degreaser like D-SOL and a toothbrush must be used to remove this residue.

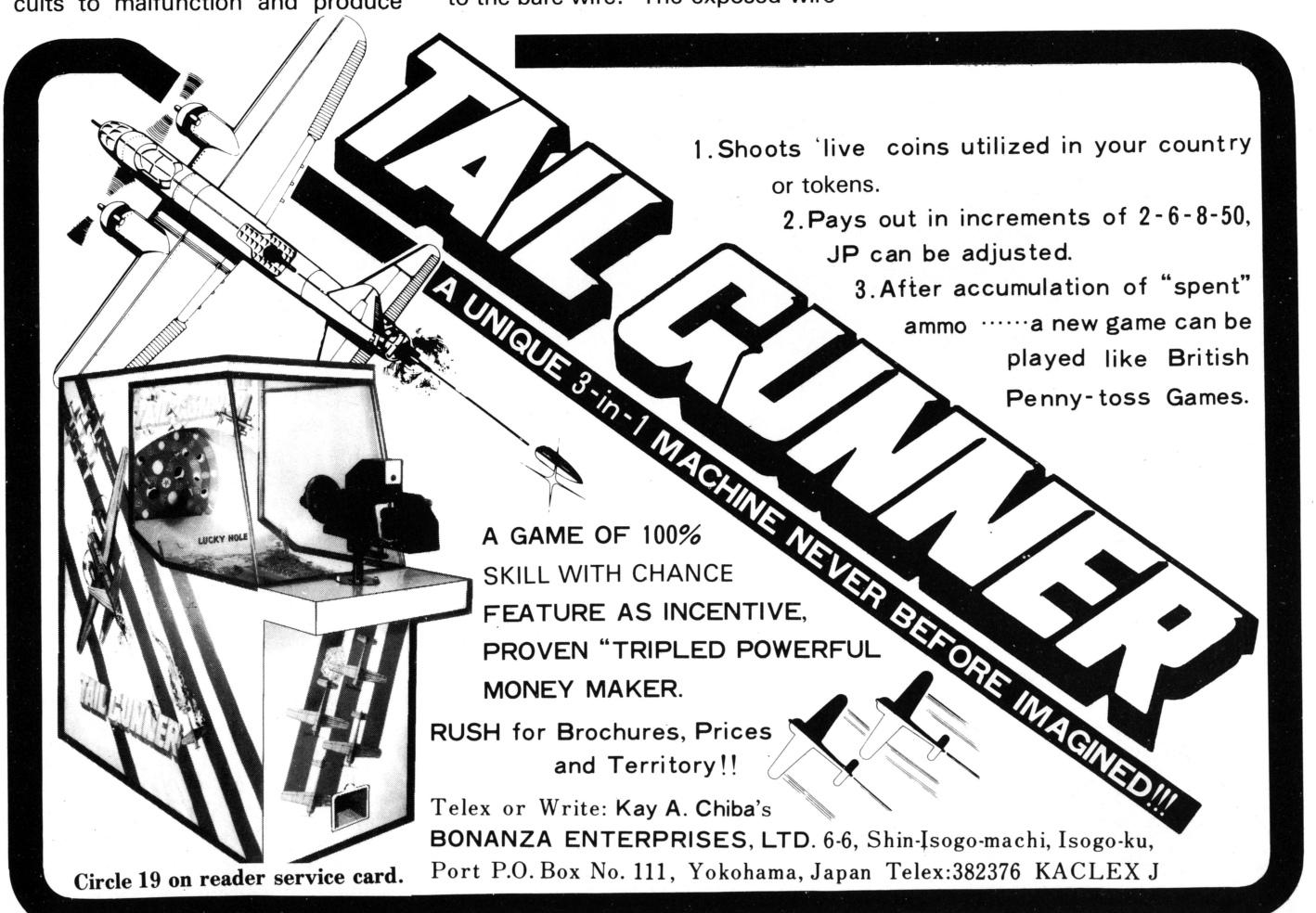
Using the yellow pages, find a company that supplies chemicals to the printed circuit houses and ask for a gallon of some type of degreaser.

When 110 volts AC is applied directly to the game computer board the demise of integrated circuits is rapid and wide spread. In fact, it is "deep-six" time for the game board. I have seen 100 VAC accidentally applied to a PC board by a soldering iron cord which was burned through to the bare wire. The exposed wire touched a component lead or IC lead and "ZAP." So, tape or replace any 110 VAC line cords which are frayed or burned.

Putting an edge connector on backwards can also lead to the replacement of eight or 10 IC's. Reversing the edge connector on Midway's Playtime causes 10 VAC to be placed on eight or nine IC's. Many other video games have similar problems. Make it a rule to mark the edge connector before removing it. Scratch in a one to indicate which is pin one. Or scratch in the word "UP" or "TOP" on the edge connector. Somehow, identify how the connector will be installed correctly.

These problems are obvious and cause immediate failures. But what about "outside influences" which are not obvious and may develop into a service problem? Factors such as dampness, dust, temperature, etc. are "outside influences"

(Continued on page 64)



Circle 19 on reader service card.

Iowa attorney general opines Table soccer athletic game,

A table soccer tournament at the Iowa State Fair almost failed to materialize in mid-August because of a legal technicality in Iowa's new gambling statutes, according to Kirk W. McKennon, sales and promotion manager for Minneapolis, Minn.,-based Hanson Distributing Co., one of the tournament's sponsors and distributor of Tournament Soccer tables in the Upper Midwest.

The tournament, co-sponsored by the Pearson Candy Co. of St. Paul, Minn. (makers of Nut Goodie candy bars) and Foosball Ltd. (operators of coin equipment in the Des Moines area), offered $2,150 in prize money for the best twelve teams after a 10-day tournament.

But a section of Iowa's new gambling laws allowed prize money to be distributed only for"athletic or sporting contests, leagues or tournaments, rodeos, horse shows, golf, bowling, trap or skeet shoots, fly casting and tractor pulling."the state's Attorney General Richard Turner questioned whether the specific naming of certain legal activities automatically made those not mentioned illegal.

"Personally," the attorney general said of the soccer tournament, "it seems to be the same as golf or tennis or any other sports, but, on the other hand, it isn't mentioned in the law." One of Turner's assistants, Joseph Coleman Jr., commented while inspecting the tournament layout in the upper grandstand level of the fair; "What we have here is another problem with statutory construction. If the legislature meant to allow games of this type--and I'm sure they did--they should have just spelled it out."

Finally, the attorney general issued a statement permitting the table soccer tournament to proceed as planned because, in his opinion, table soccer required "skill, steady

[*See next page*]

Engineers meet set for MOA

Games manufacturers' video technicians and engineers are invited to attend a round-table discussion of "Video Monitors--The Second Generation" while they are at the Music Operators of America exposition in mid-October, the sponsoring company, Ball Brothers Research Corp. announced.

The discussion session, which will not cover competitive information, will be directed by George Heard, director of engineering of Ball Brothers' Electronic Display Division. The discussion will be geared toward general conversation and sharing of ideas for future monitors that will meet the requirements of economy and function.

The engineers' meeting will be held Friday, Oct. 17 at 4:30 p.m. at the Essex Inn, which is across the street from the Chicago Conrad Hilton. The session should break up about 6 p.m., the company said.

1975 INTERNATIONAL EXPOSITION

CONRAD HILTON HOTEL
CHICAGO
OCTOBER 17-18-19

[*Continued from previous page*]

nerves and a competitive spirit." As such, the game is and should be considered an athletic event.

The tournament proceeded well and 1,000 Nut Goodie T-shirts were given away to competitors in the "King of the Table Competition" held daily at the fair. Eighty teams, many of which were sponsored by rec centers and taverns from throughout the Midwest, competed during the last two days of the fair, McKennon noted.

The first three places were captured by three Minnesota teams, he added.

Atari will show games in N.O. for NAMA goers

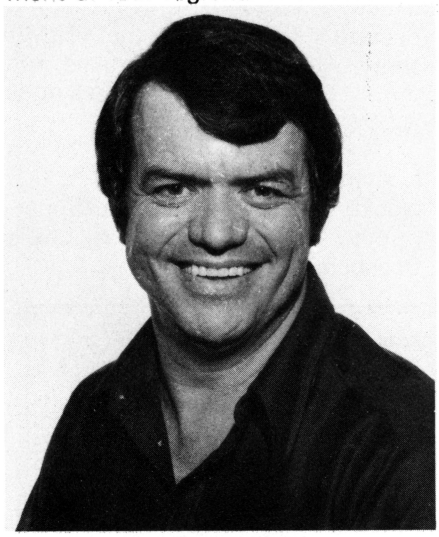
Atari Inc.'s New Orleans distributor New Orleans Novelty Co. will host a display of Atari's three new games, Steeple Chase, Shark's Jaws and an unnamed driving game for the benefit of music and games operators who attend the national vending show in the Crescent City Oct. 16-19.

The National Automatic Merchandising Association's annual convention and trade exposition will be held in New Orleans' Rivergate convention center at the same time the Music Operators of America hold their convention and show in Chicago. Realizing that some operators will attend the NAMA show, Atari's Gene Lipkin said, the firm will display its new games at its New Orleans distributor.

New Orleans Novelty Co. is located at 1055 Dryades St., a few blocks from the Louisiana Superdome. Proprietor is Louis Boasberg.

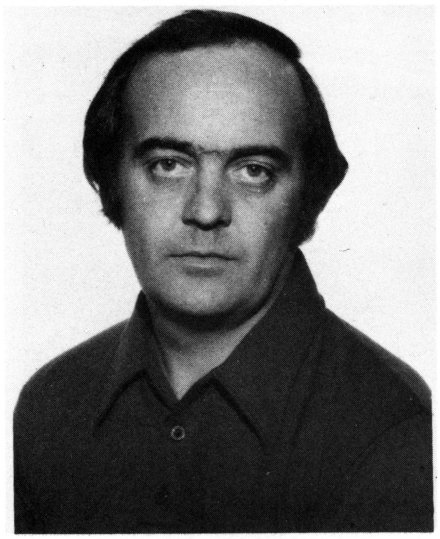
Mirco appoints regional directors

PHOENIX, Az. (Sept. 16)--Dudley Merkel, director of North American marketing for Mirco Games Inc., recently announced the appointment of four regional directors.



Pat Burke

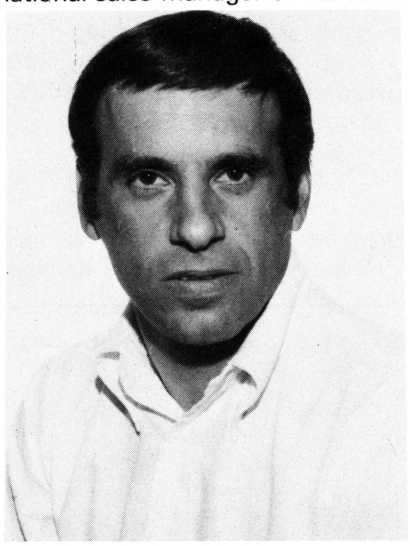
Pat Burke, director of the Midwest Region, has held recent positions as vice president and general manager with Bunker Ramo Computer Systems and president of Teltronics Communications, a hardware and software company.



Paul O'Neil

Paul O'Neil, director of the Western Region, was most recently national sales manager of Micro Computer Based Systems for Singer Business Machines.

Northeast Regional Director Herman Millstine was most recently national sales manager of manufacturing computer systems for Singer Business Machines in addition to sales management roles with RCA Computer Division and Honeywell Electronic Data Processing Division.



Herman Millstine

Tony Gonter was with Singer Business Machines in branch, district and regional management capacities bringing new electronic systems to the marketplace.

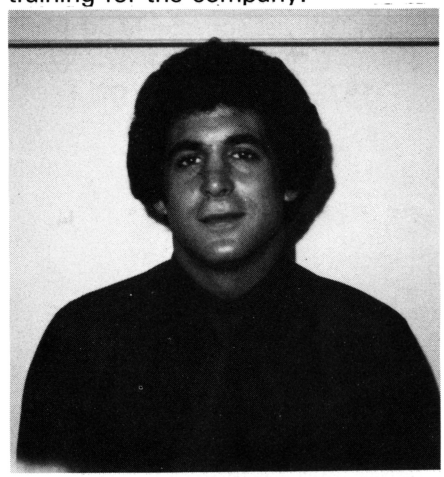
Tony Gonter

The four newly-appointed directors will be responsible for identifying and coordinating sales efforts with Mirco Games distributors in their respective regions. "All four men come to Mirco with strong marketing and technical background is desired in order to maximize the potential of the current and future Mirco state of the art, electronic computer based games," reports Merkel.

Mirco Games Inc., a wholly-owned subsidiary of Mirco Inc., designs, develops, and markets a wide variety of coin and non-coin operated games for the rapidly expanding leisure time industry.

Atari appoints Ballouz to sales post

LOS GATOS, Cal.--Frank Ballouz has been appointed National Sales Manager for Atari Inc., according to Gene Lipkin, vice-president of marketing . Ballouz will be responsible for all coin-op sales and sales training for the company.



Frank Ballouz

Ballouz moves to Atari from the A.B. Dick Company, where he held the position of sales manager, responsible for the company's complete line of copy/duplicating systems in the New England area.

A graduate of Seaton Hall University, Ballouz holds a BA degree in marketing.

Atari Inc., headquartered in Los Gatos, Cal., is a leading manufacturer of coin-operated electronic video amusement games.

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British pool tables hope to challenge U.S. tables

By DAVID SNOOK
INTERNATIONAL EDITOR

One eminent U.S. visitor to the Amusement Trades Exhibition earlier this year in London was impressed by the number of companies showing British-built pool tables, but he was far from impressed by the quality of the tables and the game which was played on them.

In fact, he was quoted as suggesting that the inferior home-produced tables were built in someones garage.

His views apparently sum up the general feeling among some U.S. pool table manufacturers about the British pool boom. Most seem to feel that American tables will eventually prove their superiority and the export sales charts will happily climb up the wall.

But on this side of the Atlantic, things aren't quite working out that way. Far from being driven out of business by the superior quality of the U.S. product, the home sales market for pool tables has expanded for British-made equipment at the obvious expense of the American manufacturers and we can report--whispered as all sacrilege must be--that someone plans to export them to the U.S.

To understand why the American product has not swept away all before it, it is necessary to understand some basic differences between U.S. and British tastes.

While the old, traditional game of snooker has almost died out in the U.S., it thrives in Britain. There are an estimated 350,000 snooker/billiard tables still in regular use in the islands. U.S. youth, therefore, has had little opportunity to appreciate the finer points of the more skillful game on the larger table, but British youngsters cut their teeth on the big table.

When the first American pool tables went into British pubs, that is why everyone took to them like they take to any novelty--enthusiastically at first. But, bearing in mind that they were used to the slower, more skillful game, they soon found that they could hammer balls down those cavernous pockets almost with their eyes shut. They lost interest. It was too easy.

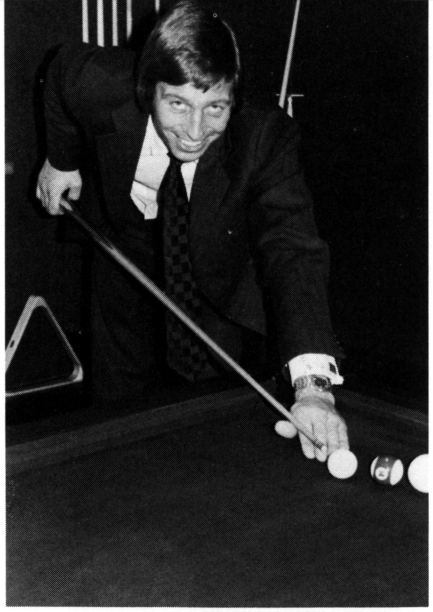
This is where the American manufacturers went wrong. We British have a healthy regard for American business acumen and were therefore astonished to find a conservative refusal on the part of the U.S. manufacturers to modify their tables to meet local tastes. In short, a complete lack of market research from a nation that virtually invented market research.

Operators began to complain to their suppliers that the balls were too big and the pockets too large. The distributors reported back to the manufacturers, but incredibly, the manufacturers insisted that the way the game was played in the States was bound to catch on.

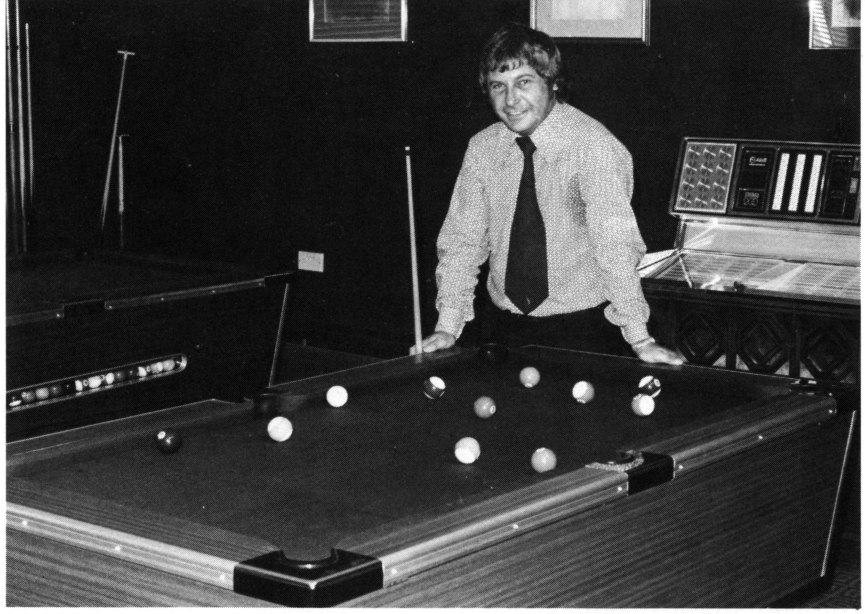
So, the British started to build their own. Certainly, some were made in garages; certainly, they were pretty well thrown together and the finish was nowhere near as good as the U.S. tables. But then, we might suggest, U.S.-built tables were only made in handfuls at a time and of rather shoestring materials when pool was first invented. No one's going to plow a fortune into

[*See next page*]

PART OF THE pool table production line at the Hazel Grove Music Co., a British firm which produces 80 tables a week.



JOHN DALE, a Hazel Grove director illustrates the comparative sizes of British and U.S. pool balls.



NORMAN RIMMES, Hazel Grove director, demonstrates his table's versatility. The top fram is hinged.

The slate bed lifts out and the ball channels are of plastic-coated steel rods.

(*Continued from previous page*)

something that has yet to prove itself. And the cheap tables were what the market wanted initially. The lower price meant less capital risk and the pockets were smaller and the balls were smaller, which meant a skillful game.

The upshot was that people sat on the U.S. tables while they queued to play a British one. And still, incredibly, the U.S. manufacturers made no move.

In case anyone is asking why the British don't go to a proper billiard hall to play a more skillful game, it is important to point out that you can't booze in a billiard hall in Britain, but you can in a pub and most British pubs don't have the room for a full-sized billiard or snooker table. When you think about it, pool in British pubs was a "natural" and the U.S. manufacturers should have cleaned up.

By the time the American producers did grudgingly start to make concessions that they had lost a massivc slice of the market to British competition. They cut down ball size and pocket size, but by then the British had passed the embryo stage. Their market was assured, pool was here to stay, the boom was underway, they had gained valuable experience, and they had earned the capital to improve on their product and their facilities for making it.

Pool arrived in Britain four years ago. The boom really began about two years ago and informed estimates suggest that the rapid expansion of the pool table industry will continue for about another two years, after which a healthy replacement market will exist.

The pool table will, by then, become as common a sight in a British pub as a slot machine or a jukebox and anyone who has been to Britain can do their own sum, for they can't fail to have noticed the proliferation of pubs. Add to that the current hint of big possibilities in arcades, where operators have for years wondered what to do in the winter months to pay the overheads on those empty seaside fun palaces. Several have already moved out their slot machines and amusement games in October to turn their acades into pool rooms for the locals. The possibilities therefore seem fairly limitless.

And who are these giants of the British pool table industry? While the demand continues to outstrip the supply, every manufacturer is furiously expanding, but way out in front are Alca Electronics of Oldham, Lancashire; and the Hazel Grove Music Co., of Cheadle, Cheshire.

Each company produces about 80 pool tables a week and each are reckoned to be the best in the field by their loyal followers.

Currently hitting the headlines, however, are the Hazel Grove Music Company, who are about to open a 10,000 square-foot factory to supplement their 22,000 square feet at Cheadle--all for pool tables

This 12-year-old company operates 600 juke boxes in the Greater Manchester area and only went into pool table production because they couldn't get an American table that the pub customers found skillful enough.

The company's three directors, Barrie Denton, Norman Rimmer and John Dale looked at the market very carefully for 12 months and then built a table that in another 12 months had sold 2,000. During much of that time, their production was building up and now with the new premises they intend to make 100 a week right through 1976.

"The problem with the American tables," Barrie told *Play Meter*, "was initially that the manufacturers over there just assumed that the American game would be equally popular here and even when the evidence suggested that they were wrong, they refused to see it until recently. Now they are starting to build what our operators want, but they now have a very competitive British industry to overcome. We can match them for quality now and undercut their prices because of shipping costs."

The Hazel Grove table is six feet long by three feet-six inches wide (outside measurements) and use ball two inches in diameter. The cue ball is one-and-seven-eighths inches

[*See next page*]

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British pool

(*Continued from page 51*)

in diameter. The pockets are three-and-one-sixteenth inches wide.

Compare that with the U.S. dimensions of two-and-a-quarter-inch balls and five inch pockets and the skillful element is illustrated.

The American argument is obviously that the easier it is to pocket a ball the quicker a game is over and the more the table takes. But that psychology doesn't work in a country used to a full-size billiard and snooker table. Better to make it harder to pot a ball than have no one playing at all.

Even so, Hazel Grove operates 100 of their tables themselves and they can produce returns sheets that show their tables take around 80 pounds ($185) a fortnight and their top site makes 92 pounds on average. That, by the way on 10p play (23 cents).

And the game lasts an average eight minutes.

Why such a small cue ball? Hazel Grove found that the large U.S. cue ball resulted in service calls for new cues. Lusty thumps to break a pack of object balls resulted in split cues or broken tips. The smaller cue ball is also easier to "screw" back.

What else have the British done to the pool table? Hazel Grove's current model, for example, has a hinged top frame, enabling the slate bed to be lifted out, an operation taking 30 seconds. They have built the cash box into one of the legs to hold more coins (140 pounds or $350) and for security ("You get at the cask box from inside the table--if they can't see a cash box door they won't kick it in!").

Their internal ball channels are made of quarter-inch steel wire, plastic coated. This allows anything that drops down a pocket that shouldn't be there to fall straight through. The openess of the "guts" of the table also means that an obstruction can be cleared merely by removing the coin mechanism drawer because the pub landlord can see right through the channels.

There are many other refinements, but that, basically, is the product that is currently showing the U.S. tables the way home in Britain an it sells for 350 pounds ($820) which is about 50 pounds less than the U.S. tables.

To the firm's certain knowledge, Hazel Grove tables have been taken to Italy and to the United States for a closer look by the opposition, although it doesn't seem to worry the British company unduly. "We've a very large slice of the market now and between ourselves and Alca, the U.S. manufactueres will have a job to break down our lead."

Hazel Grove is therefore sending Barrie Denton to M.O.A. to investigate the possibility of exporting Hazel Grove tables to the U.S. "We want to see whether the game would go down well there in its British form. There is no reason why the American youngsters should not like a more skillful game if they had one to play. But we'll do our market research first."

It would indeed be ironic if the venture was successfully undertaken, for who knows, the "freak" game as it was dubbed by Americans at A.T.E. may catch on in the U.S. If it does, it would provide a rather embarrassing situation for the U.S. manufacturers who have apparently suffered from the most un-American malady of complacency and lost opportunity in at least one overseas market

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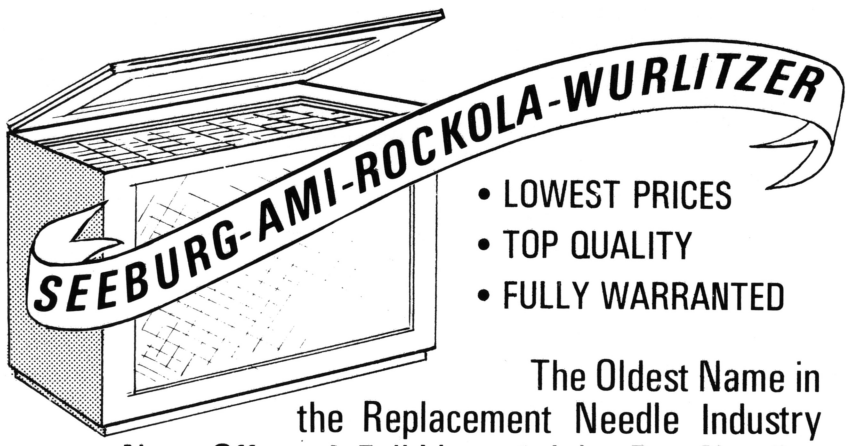

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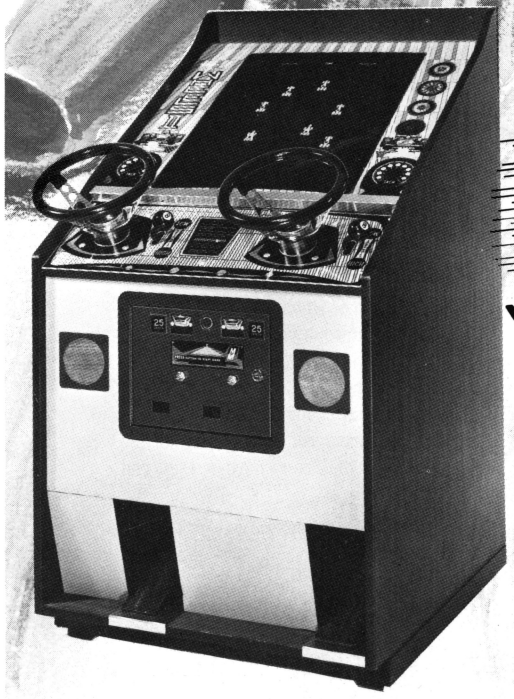

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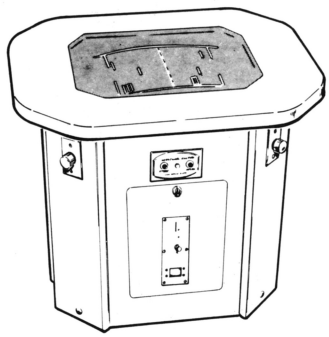

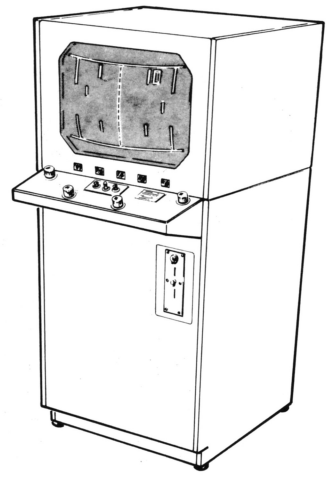

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Silicon Gulch

(*Continued from page 35*)

new technologies with which to realize them. Once realized, the games will be promoted to the utmost because "we believe that promotion is part of the game's potential," Lipkin says. "There's more to it than putting it on location and hoping someone will play it."

Some of the creative promotional techniques Lipkin has used have been radio advertisements depicting the sound of a Tank or an Indy 800 and asking listeners to call in and identify the game by its sound. Winners were award Atari T-shirts. In addition, Atari has been active in promoting the total environmental location concept, going so far as to establish its own arcades with which to test its theories of designing electronic games into walls and special multi-game cabinets.

With its continuing avant-garde stance toward the industry upon which it has had such a profound effect over the last few years, Atari probably will never find itself of being a dinosaur in the valley of the moon.

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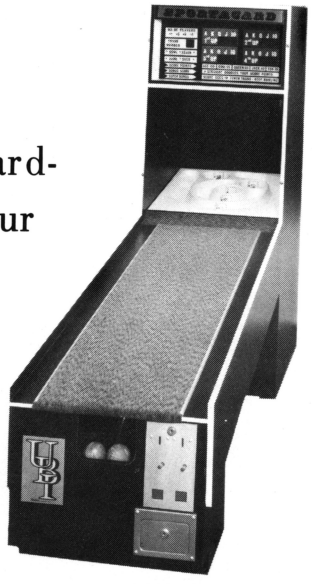

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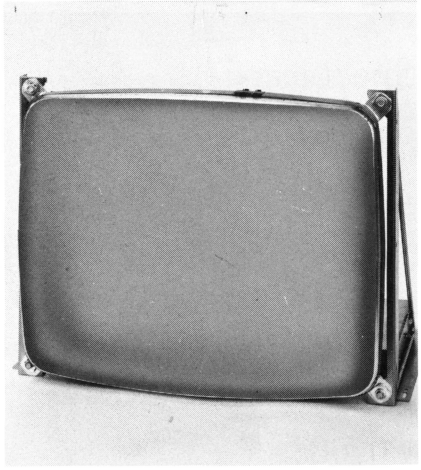
New monitors available for video games

Two new monitors for the video game industry have been introduced by Ball Brothers Research Corporation's Electronic Display Division, St. Paul, Minnesota.

The new monitors are available in 19-inch and 22-inch (frequently referred to as 23-inch) sizes to manufacturers of video games.



Long known for its Miratel line of monitors, Ball's Electronic Display Division has 20 years of experience in producing video monitors, pioneered solid-state monochrome and color monitors, and was the first large-scale supplier of precision monitors for the aerospace program, according to company executives.

Ball Brothers Research Corporation is a wholly owned subsidiary of Ball Corporation, Muncie, Indiana, which began business in 1880.

Ball monitors are commonly seen in airports around the world, displaying arrival and departure information for travelers. Their monitors are also found in use as studio monitors in television network headquarters and in high-resolution scientific closed-circuit applications.

Now a leading supplier of CRT displays to the expanding computer terminal market, Ball introduced the compact and light-weight wire frame to that industry and makes custom-designed frame configurations available.

The two new products for the video games industry are not experimental items. The circuitry and components used are field-proven and reliable, according to William S. Sadler, vice president of the Electronic Display Division for Ball.

"These monitors operate at power line voltages down to 100 volts, to keep them working in 'brown-out' situations and they have excellent performance on voltages and frequencies typically encountered in Europe," Sadler said.

Sadler explained that the monitors have the ability to operate from composite or non-composite video signals, incorporate special video blanking circuits and include construction that provides ruggedness regardless of the mounting angle of the monitors.

The new monitors feature state-of-the-art circuit design, using proven integrated circuits for performance and stability. A direct-drive feature virtually eliminates the need for synchronizing control adjustments, while a composite video option allows for use in systems designed for such operation. Horizontal and vertical overscan capability allows full screen display of the maximum possible size, and short retrace time optimizes drive logic design, resulting in lower costs and an increase in the amount of information displayed, he said.

"We've designed and built them for easy maintenance. All of the alignment procedures and adjustments, for example, are simplified and easy to accomplish. In addition, each of the maintenance steps is clearly and carefully documented," Sadler said.

Further details and information are available from BBRC Electronic Display Division, 1633 Terrace Drive, St. Paul Minnesota 55113, (612) 633-1742

Bally solo features busy kickout hole

"Smack in the middle of the playfield, the High-Deal kickout hole is the busiest kickout hole I've seen in years in terms of scoring action," Paul Calamari, sales manager of Bally Manufacturing Corp., Chicago, remarked of a feature central to the play appeal of the new flipper game, delivery of which commenced this week.

First of all," Calamari continued, "a ball shot into the kickout hole, when lit, scores special. The special light is lit after all cards of an ace-high straight, depicted on the playfield--A,K,Q,J,10--are lit. Also a ball in the kickout hole, not only scored 1,000, but also advances the bonus 1,000, for each card lit in the straight. Thus, a ball shot into the hole with all five cards lit, scores special, scores 5,000 and advances

(*Continued on page 59*)

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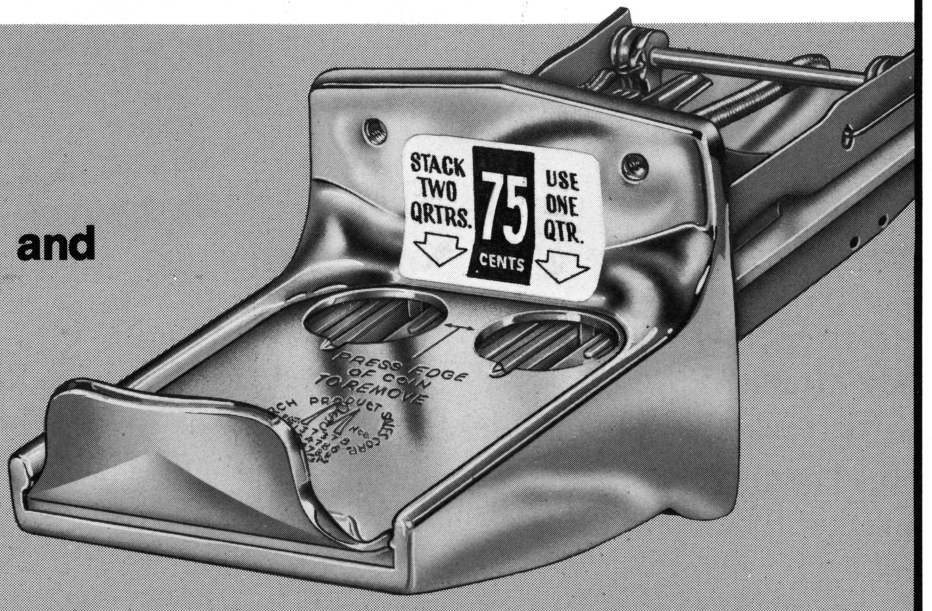

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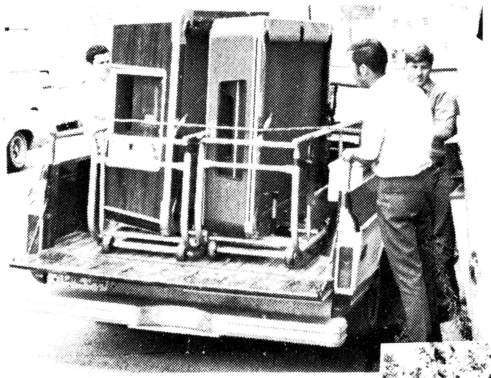

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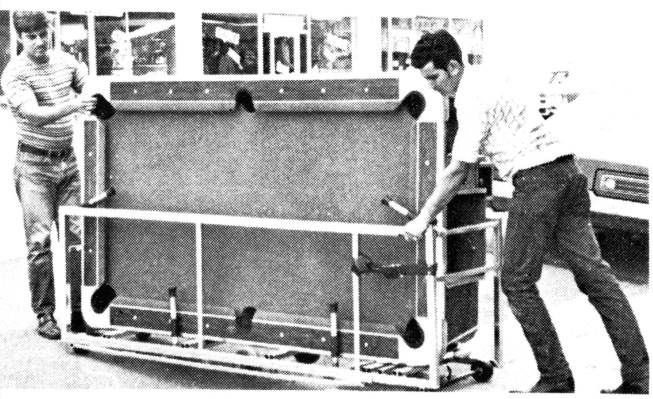

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(*Continued from page 56*)

the bonus 5,000.

"The ace-high straight is another outstanding play attraction of Hi-Deal, not only, as I've already mentioned, but also in respect to extra balls and the popular spinner gate. A ball crossing the rollover in any of four bottom lanes when lit delivers an extra ball to the thooter-tip. The light alternates, left and right, between the two outer lanes, after bonus score is at a predetermined level, but between the two inner lanes, the light alternates after the complete ace-high straight is lit. Similarly, each spin of the spinner gatge normally scores 100, but the per spin count is upped to 1,000 when the gate light is lit after the full straight is lit. The number of spins per hit depends, of course, on the force of the hit.

"Several new technological improvements are introduced in Hi-Deal. For example, power to slingshot kickers and thumper bumpers is converted to D.C. to insure extra strong action. A totally new flipper design provides extremely sensitive flipper buttons and a new high degree of swat power to the flippers. Another new feature is the 'big boom' knocker, which replaces the old sounder and gives the strong, staccato bang operators have been asking for.

"Location tests indicate Bally has really come up with a single-player winner in Hi-Deal in any and all types of locations, any pricing, three-ball or five-ball play, with or without match feature. Hi-Deal is a big deal for operators who've been waiting for a stellar solo-player flipper."

Face-to-face competition marks game

"Invasion Stratogy is the next generation of pinball now," claims K. Richard Payne, president of Komputer Dynamics Corp., Indianapolis, Ind.

The new solid-state two-player pinball game features face-to-face competition, the players standing at opposite ends of the table and playing simultaneously.

The game has digital scoring, eight flippers and two balls per play. Players have the ability to shut down two of their opponent's front flippers and the ability to disable an opponent's thumpers. The colorful graphics depict an invasion by aliens from space.

Briarwood introduces Professional

SKOKIE, Ill.--The Briarwood Division of Brunswick Corp. is currently introducing its newly designed Professional Coin-Op Billiard Table.

Designed with dependability and durability in mind, it boasts many features, including a three-quarter-inch one piece slate bed, which assures a permanent playing surface. This surface, combined with heavy-duty box beam construction, is capable of accepting a vertical load bearing of more than 18,000 pounds.

The pockets feature durable rubber pocket pads. Cloth re-inforcements help prevent wear at the pocket openings.

Bright, satin-finished corner castings are made of heavy-duty die-cast metal. They are fastened to Melamine-covered, solid hardwood rails with hexhead bolts. Heavy-duty anodized aluminum rail trim helps prevent rail damage.

The ball storage rack is easily accessible through a removable ball receiver door which has a kick and tamper-proof window. Keys for the viewer door differ from the rugged coin-box, which has a capacity for $400.

The table is designed for easy installation and sevicing. The only tool required to set it up is a half-inch socket with ratchet and short extension.

The Professional Coin-op Billiard Table is available in seven- and eight-foot sizes, both featuring wide heavy-duty adjustable leg levelers.

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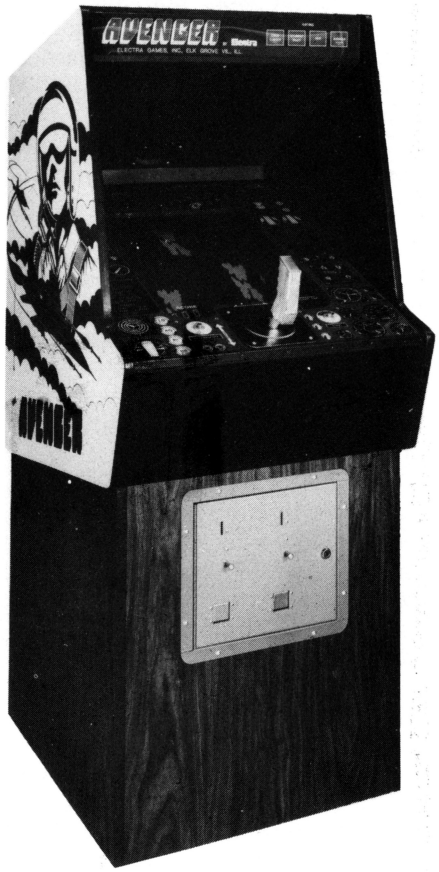

WILLIAMS Flipper features bowling

Williams Electronics Inc. has produced a new single-player flipper pingame with a bowling theme called Triple Strike.

The game features an eject pocket and "A,B,C,D" targets that control the star features on the playfield for increased scoring. There are also a hold-over bonus feature, an extra ball feature and a lighted special lane feature. The eject pocket also increases value on the last ball and there is a match feature.

The crated weight of the game is 250 pounds and it is 52 inches deep, 26 inches wide and 70 inches high.

Electra Games' Avenger high on jet combat

ELK GROVE VILLAGE, Ill.--Electra Games is introducing its new electronic aerial combat game, avenger at the MOA show in mid-October. Avenger is a single-player game and, according to the company, is the industry's first single-player to feature three plays for two quarters as a means of encouraging the individual player to play a multiple series of games.

The game is controlled by a hand-contour joystick which guides and controls the speed of a sleek, simulated jet aircraft. In flight Avenger is harrassed by a continuing stream of smaller "bandit" attack planes which come at it head-on. When a bandit plane collides with Avenger it cracks up in midair with a crash.

But Avenger has firepower and can line up a bandit plane as it approaches and fire its nose cannon (with accompanying projectile sounds) at the enemy planes. When a bandit plane is hit by a cannon shell it disappears to the accompaniment of a simulated explosion. The speed of Avenger is increased by pushing the joystick forward.

Points are scored by keeping Avenger in uninterupted attack at the fastest possible speed. An "afterburner" control predictably speeds the flight and increases the scoring of points. The flight of the avenger is interrupted at the time of collision with a bandit plane resulting in a corresponding loss of time. The game has an extended play feature, adding approximately one-third additional playing time to a player attaining the rating of Avenger.

"Operators are really going to appreciate the new three-plays for two-quarters feature," said Stan Jarocki, Electra sales manager. "What it does is offer a strong incentive to the player to continue with a multiple series of games, keeping the game constantly in use, which has been something of a problem with a single player game. Of course, the player can play one game for one quarter if he so desires, but my guess is that he will take advantage of the extra game that comes with the second quarter. I've learned from the music business that most players will not pass up bonus plays."

"We're also proud of several other features with this new game. It's extremely competitive in nature." continued Jarocki, "in the best tradition of current combat games and the realistic graphics on the side of the equipment are guaranteed to attract attention and pull people over to have a look."

Avenger also features a 23-inch Motorola monitor and has a long, sweeping canaopy on top both for striking appearance and to eliminate ambient lighting glare. It has a double rejector coin door assembly and a simple potentiometer adjustment for "game time".

ChiCoin taps WWI theme for flipper

CHICAGO, Ill.--Blue Max, Chicago Coin's new four player flipper game, is now making its nationwide debut at all Chicago Coin distributors' showrooms, according to Avron Gensburg, executive vice president.

"Blue Max is a high score game with a whirlwind of ball action on the colorful playfield," he said. "We've incorporated new center double spinners with scoring of 100 or 1,000 when lit. Our A-C-E feature, which has proved to be a strong play incentive, lights the "extra" lane for an extra ball when letters A, C and E are all lit. A "special lane" hole adds to the ultra-high score potential with scores of 500, 5,000 or special when lit;100-point power bumpers, advance bonus buttons, advance bonus lanes that also score 1,000,

[*See next page*]

[*Continued from previous page*]

double bonus on last ball and a "shoot again when lit" feature all contribute to the excitement.

"The colorful backglass is an effective player attraction, with illustrations of authentic WWI Luftwaffe war planes, flyers and the legendary Manfred von Richtofen," Gensburg added.

Blue Max, in three-ball play, is convertible to five-ball play. Game is adjustable from two plays for a quarter to one play for a quarter or three plays for two quarters.

Adjustable frames seen on new bowler

CHICAGO,Il.--The introduction of Chicago Coin's new six-player puck bowler, Champion, opens an exciting new potential for operating profits, according to predictions by Avron Gensburg, the company's executive vice president.

"In Champion, we've engineered a shuffle bowler that is adjustable for five-frame or 10-frame play," he said. "This is a first for the industry, and we and our distributors are most enthusiastic about the player acceptance that has been reported from our toughest test spots.

"Added to this convertibility, there are five exciting ways to play, including the new "strike or bust." This feature makes for faster play because the player is allowed only one throw per frame. Strikes score 300,400 or 500. Pin count is 10 for each pin down. Other ways to play are Chicago Coin's popular Regulation, Strike Champ with the Keep Striking feature, Beer Frame (200 or under optional) and Flash-O-Matic," Gensburg went on.

The colorful, low-profile cabinet is only 67.50 inches high at the backrack. Champion has been designed for quick and easy servicing of all components. Play is adjustable from two plays for a quarter to one play for a quarter. Chicago Coin distributors now have Champion for prompt delivery.

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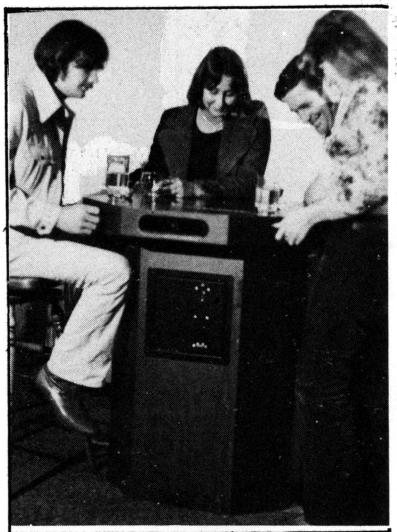

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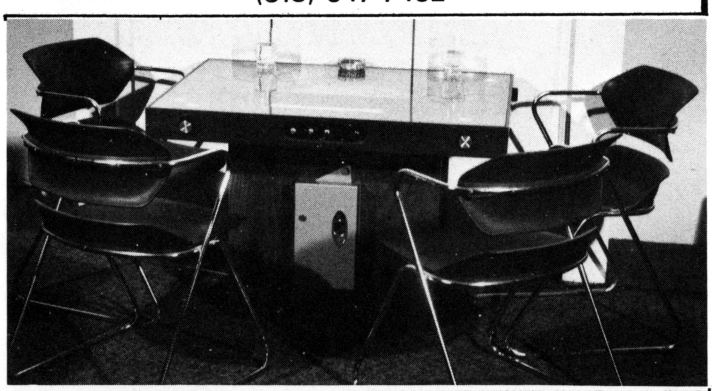

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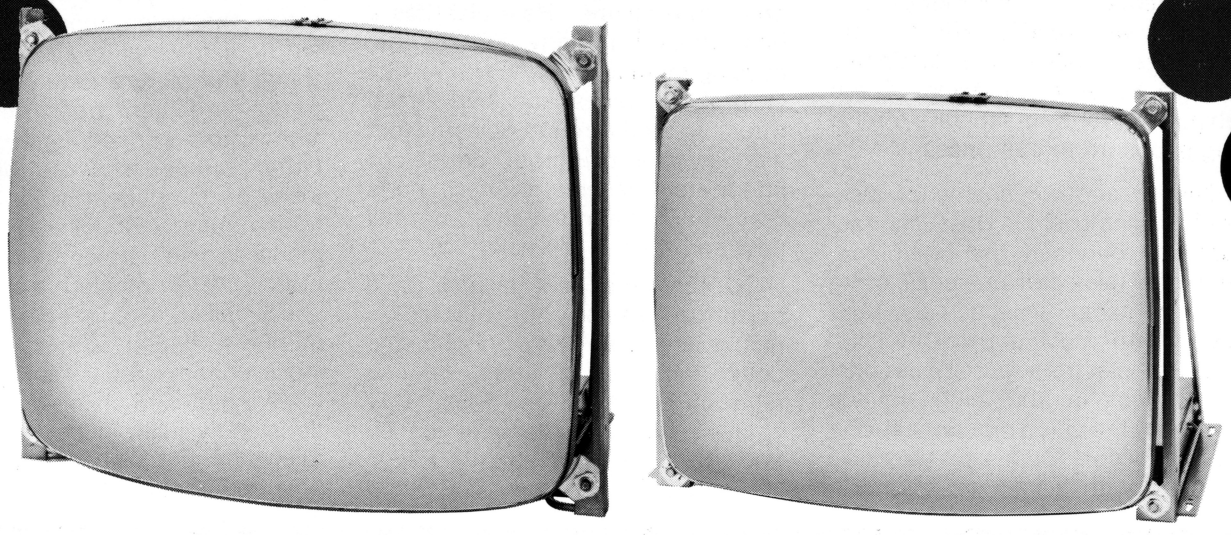

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(*Continued from page 45*)

which can cause long-term service problems. Once these factors are understood, corrective action can be taken, preventing undue aging of electronic components.

Dampness allows arcs to occur in the high-voltage circuits in the video monitor. These arcs form a carbonized path that bleeds away current and overload high-voltage rectifiers and flyback transformers and lead to the breadkdown of these components. Potentiometers and trimmers are readily affected by dampness. Also, the laminates used to cover the outside of the cabinet will tend to separate after a long exposure to dampness.

Dust is another enemy of electronic assemblies. Dust can accumulate between the open contacts of a relay and prevent closing of the contacts. Dust can also raise havoc with moving parts in jukeboxes. In electronic assemblies dust can collect in the high voltage section of the video monitor causing arcs to occur. Dust can be easily removed with a vacuum cleaner. Use the smallest nozzle you have. A small paint brush can be used to loosen the dust while you vacuum the area.

Heat is another factor which hastens aging of electronic equipment. Heat is probably the principal cause of solid-state device failures. Heat can melt the seals on capacitors, allowing moisture to enter and cause these units to change their characteristics. Heat raises the ambient temperature of transformers, resistors, transistors, IC's and other components above their rated temperature and contributes to their premature failure. Heat also has a bad effect on many PC boards, causing them to warp, which results in broken etches and bad "feed thrus" (plated through holes). Heat also is the principal cause of intermittent failures in those parts that work great in the shop, but fail now and then in the field.

To keep the heat failures to a minimun, keep your electronic games and jukes away from heating units, such as radiators, heating registers and the like. Make sure your machine has adequate ventilation. If you are operating in a high temperature environment you might consider increasing ventilation of the game. A few half-inch holes at the back of the cabinet could help. Remember heat rises, so drill the holes as close to the top of the cabinet as possible.

Rapid temperature cycling is possibly even harder on electronic equipment than is a sustained elevation of temperature. Protect your equipment from temperature extremes.

Treat electronic equipment gently Just because the cabinet doesn't fall apart when you drop it doesn't mean the video monitor has not suffured"internal injuries." for one thing, the picture tube is made of glass and can be fractured. Connectors can be jarred loose. Other components can be pulled loose or component seals broken, which may take weeks to finally manifest itself in component failures. After moving a machine, check all the connectors, video monitors, wiring harness, etc. for loose connections. Taking two or three minutes to check out connections and visually inspect a machine might be the best investment of time you could make.

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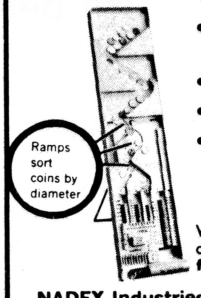

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COLLINS: When I collected, I had meters and when I went to collect, I would show my location the reading of the meter and I would give them the extra change I had left after bagging the change into proper amounts. At the end of the week I would show them how much it cost. This is another way you are sure your collectors aren't giving money away. Sometimes the location owner can be pretty popular with the customers at the owner's expense.

PLAY METER: Do you think control systems like the ones we now have or something perhaps more sophisticated than that would allow the operator to just go in and remove the money and give the location owner a reading and just write him out a check rather than sit and count all that money.

COLLINS: That is a good thought, but meters and machines do malfunction. I would like to see it get to that point. I would certainly save a lot of time. In our case, however, we pretty much go into the location, count the money and give the location owner a collection slip before he pays us. I like that a lot better because you eliminate pilferages, break-ins and that sort of thing. Giving the key to the cash box does cause some minor problems, but it saves money in running a change service in most cases.

PLAY METER: They don't have the key to the machine?

COLLINS: No, just the cashbox. Even if a meter malfunctions, we will run a mean average. We will take five or six weeks and average them out to find out pretty closely what was taken in during that week. It is really good business to make the contract and make it stick. I've had a case for which I won a consent decree

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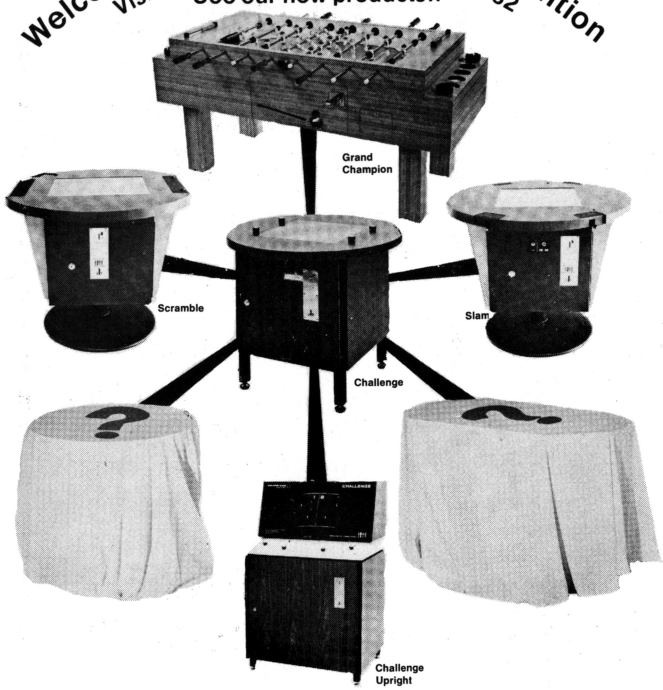

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of $3,400 because a location took my machines out and put someone else's in. I had to sue him. But, I won the average weekly collections to the expired terms. In my case, there was lost income of the year. So the court gave me a judgement. Locations know now contracts are strong. They are respected.

PLAY METER: How are operators preparing for the sophisticated and technical machines of the future?

COLLINS: We have taken the Kurz-Kasch courses. We have five or six men who have taken the course. We also hired an engineer to repair our boards and amplifiers. That does cost a lot of money; so the smaller operators cannot afford that. The distributors are just going to have to help the smaller people with the repair services. People who aren't up on digital circuitry simply will be out of luck. We are going to see more of it, they are everywhere already. Of course, we are getting more collections out of them.

PLAY METER: Is the attraction of digital circuitry games detracting from the music box collections?

COLLINS: I can't see that the games are competing with music. The problem in our vicinity with the jukeboxes is the bands--live groups. We are having to get guarantees.

PLAY METER: Some people believe in a "constant" cash box theory. In other words, that there will always be approximately the same amount of quarters in the same locations.

COLLINS: No, I do not believe that to be true in all locations. In some locations an owner draws his business from a two or three block radius so that there's naturally going to be a closer average. In a lounge where there is a lot of varied traffic, I have got to believe that some of the equipment makes people turn loose their money quicker.

PLAY METER: Do you feel we were severely affected by the down economy?

COLLINS: High unemployment naturally helps our industry, since there are more guys hanging around having more time on their hands. I do not feel that we have been as closely affected by the economy in this end of the operation. It is a shame to say it. I hate to see our industry capitalize on such an adverse situation. But it does exist and people derive an "out" through the playing of games, listening to music, etc. Inflation has taken its toll with us, though. We are paying more for services, labor and materials. We can't escape that, but in the coin machine business, we make our money off the middle class by offering them an escape from their troubles. Another economic point for this industry is that we have been taking advantage of the lay-offs in other industries in which technicians would be working, therefore getting them at a lower scale than if they were in demand. We have picked up some pretty good people that way.

PLAY METER: What do you think is the coming market as far as locations are concerned?

COLLINS: I am working on a deal to incorporate a theater chain in the business. Grocery and department stores are already beginning to place machines in their foyers and outer perimeters. There are potential new locations out there. Video and electronic games have given us new methods for making money and that has enabled us to grow.

[*Continued on page 76*]

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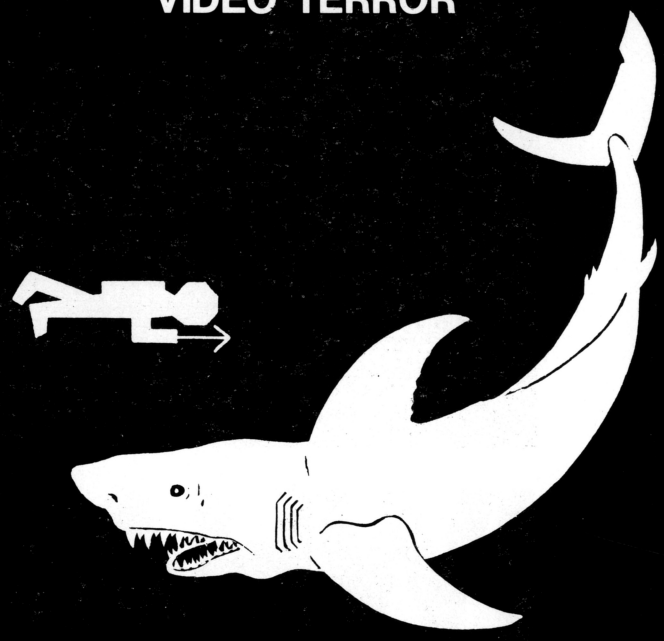

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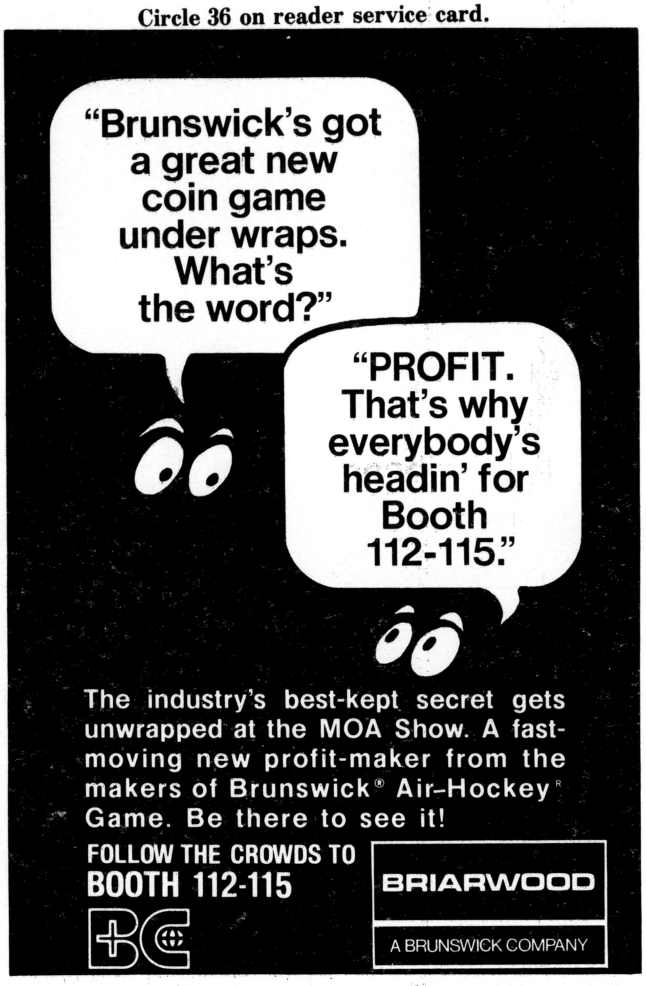

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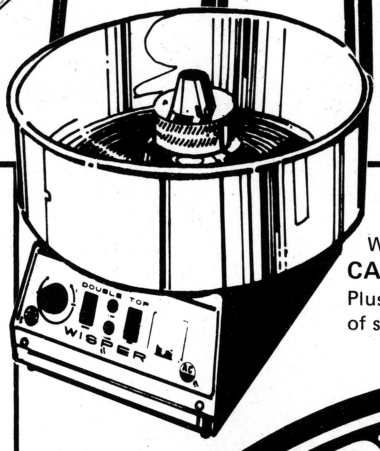

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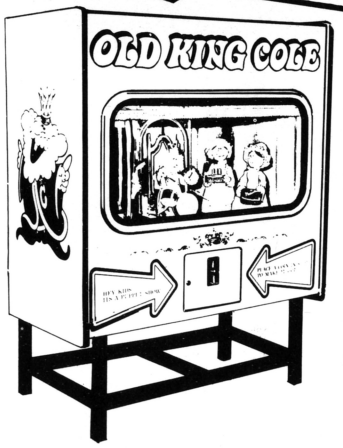

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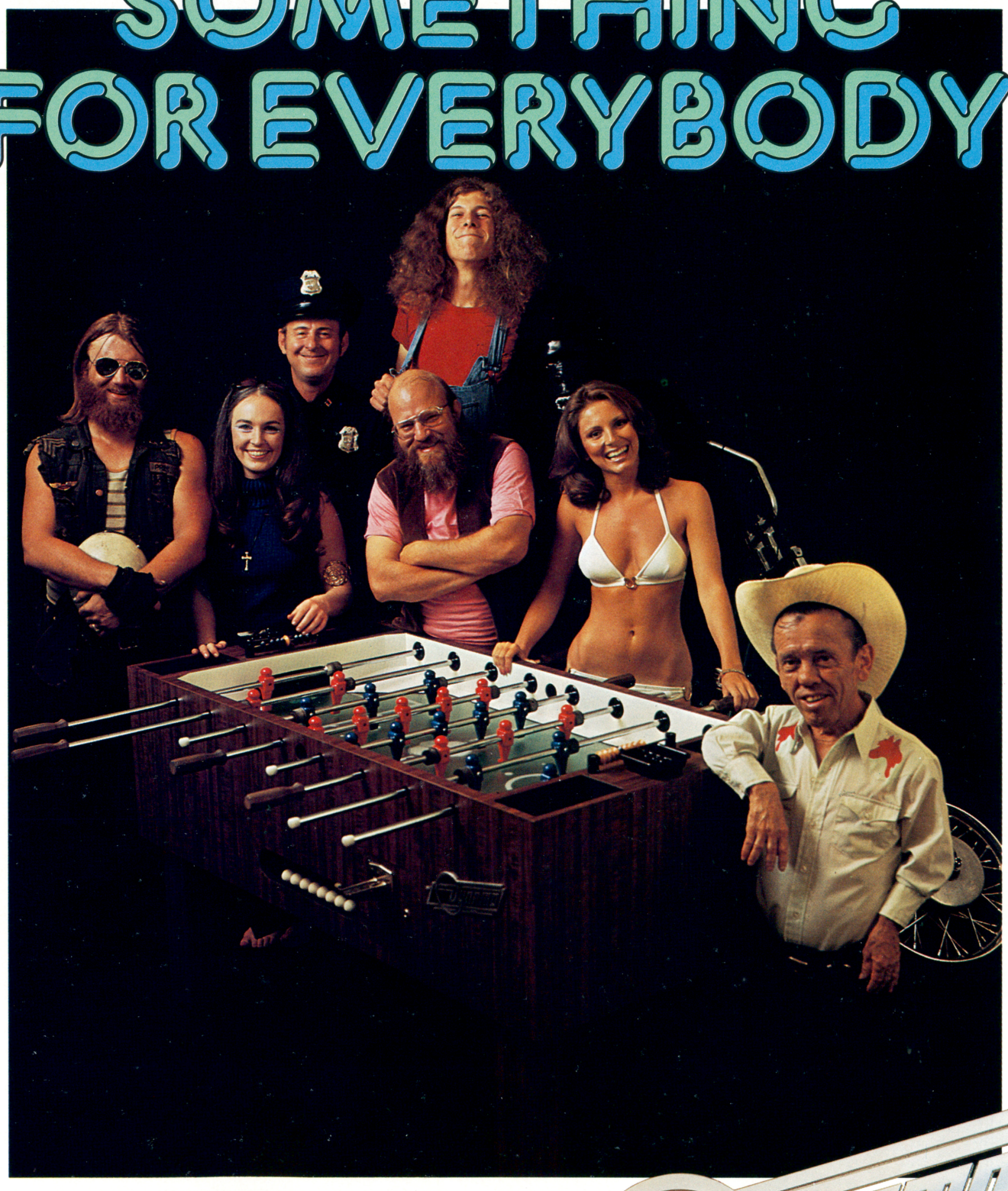

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Coinman

(*Continued from page 67*)

PLAY METER: Taking everything into perspective, looking at the future in light of the economy, what advice would you give as an operator and president of MOA to the operators out there if they want to survive this battle of survival of the fittest in the months and years ahead?

COLLINS: Well, I don't have any one thing, but I do think that attitudes have to change. We should change our own attitudes and try to change our customers' attitudes against the old standards of doing business and get into the new way. We have to use innovations, new ideas and new types of equipment. We have to give services and charge for some of the services we've been giving away for years. We definitely have to have new types of equipment. I don't think anyone would disagree--these are changing times and we have to change with the times.

We have to have digital technicians. We have to become better businessmen in order to make a profit. We have to hire qualified people--not only technicians, but salesmen and collectors who will adapt to the new attitudes and ways of doing business. To get right back to it we need a better commission structure. With some of this new equipment, I've found I'm getting 60 per cent on all my foosball, tv and drive games and I'm going to start working on jukeboxes. We have to get better than a 50 per cent rate. If I had any one thing to say that I wanted to get across this year, it would be meter and coin-control equipment for a more efficient operation.

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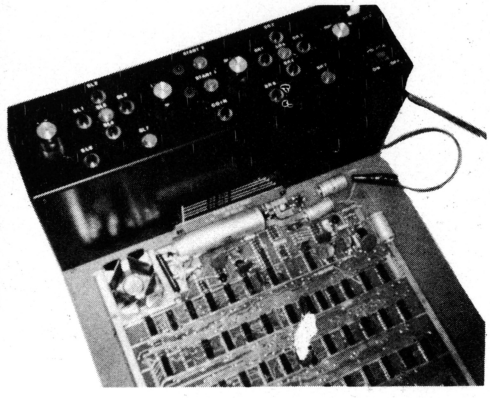
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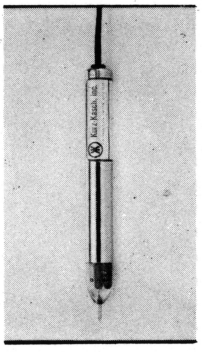
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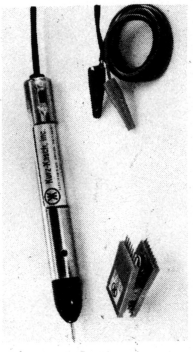
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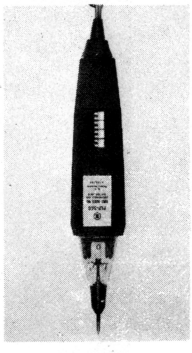
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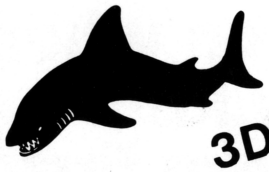

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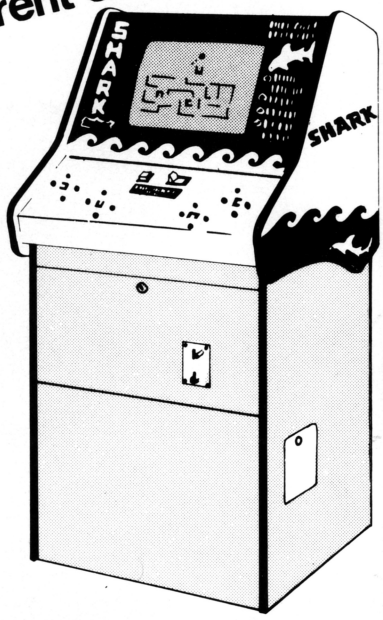

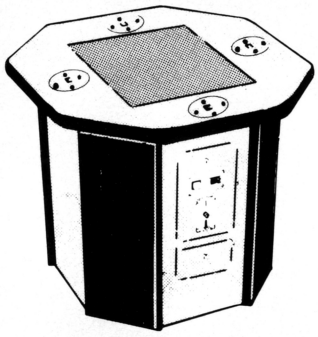

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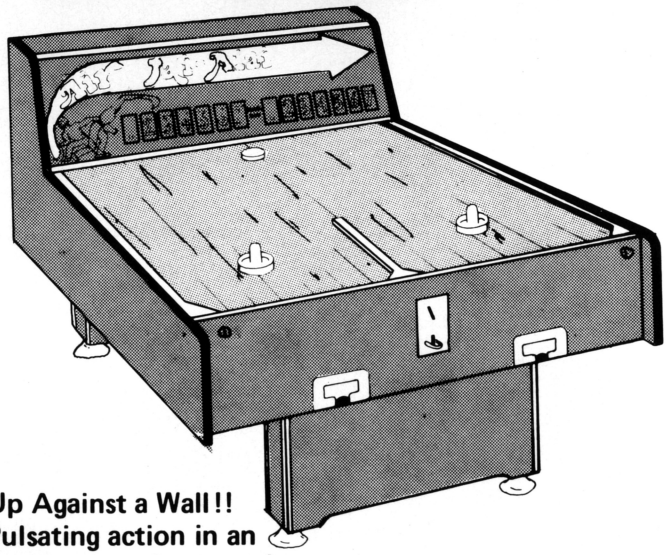

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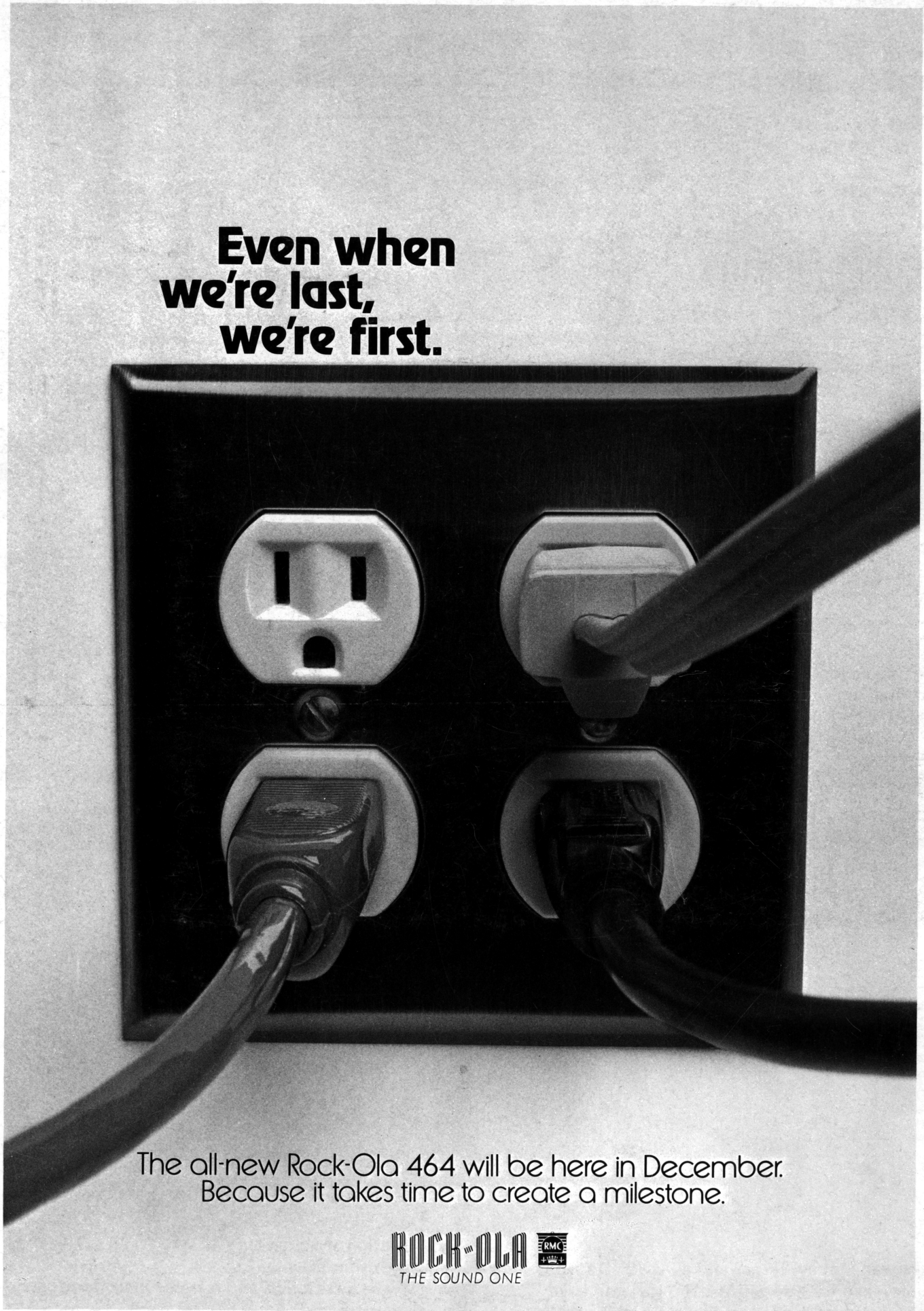

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